

CANADIAN JOURNAL OF CHEMISTRY, VOLUME 50

SUBJECT INDEX

- Abietic acid, pyrol. at 400–500 °C, mechm., 2224
 Accommodation pumping, use for sepn. of gas mixts., 957
 Acetaldehyde, from C_2H_4 , catd. by Rh(III), 1698, 1708
 Acetals, conformns. necessary for ozonol., 3402; substd. cyc., nmr, 412, 423
 Acetic acid, trifluoro-, ionic assocn. and conduct. of electrolytes in, 3789
 Acetolysis, epimerizn. of monosaccharides, 1092; 2,4,7-trinitro-9-fluorenyl *p*-toluenesulfonate, effect of press. on kinetics, mechm., 1303
 Acetone, bromination, kinetics and mechm., 3233; liq.-vap. equil. in binary systems with MeOH and cyclo- C_6H_{12} , and in ternary system with both, 479; phys. props. of binary systems with cyclo- C_6H_{12} , MeOH, and of ternary system with both, 1109; quenching of triplet state in soln. by amines, mechm., 3426
 Acetonitrile, adducts with boron trihalides, disocn. and exch. by nmr, 1262
 Acetophenone, hindered rotn. in *o*-subst., 2470
 Acetoxime, solvent effects on chem. shifts in ^{13}C nmr, confign., 1956
 3-Acetoxy-1-methylpiperidine, synth. and conformn., epimeric conjugate acids, 803
 Acetylanhydroids, synth. and therm. transesterificn., 2365
 Acetylcholine, cyclohexyl analogs, synth. and conformn., 3998
 1-Acetyl-5,5-dimethyl-2-thiohydantoin, mechm. of hydrol., 3921
N-Acetyl-2,3-diphenylindole, reacn. with HNO_3 , struct. of prod., 3392
 Acetylene(s), alkyl-, reacn. with SiF_2 , 465; complexes with Pt, prepn., 1325; reacn. with SiF_2 , 459
 Acetylglycine, complexes with Cd, Zn, and Pb, struct. from nmr data, 1036
 Acid catalysis, amide hydrol., mechm., 771; isomerizn. of adducts of azodicarbonyl compds. and cyc. dienes, 1568; ketone hydrn. in mixed solvents, 1992
 Acid hydrolysis, 1-acyl-2-thiohydantoin, mechm., 3767
 Acidity, β -diketones, 2622; fluorinated alcohols, 512; fulvic acids, titrm., 2680
 Acidity function, Hammett, for prim. aromatic amines, 581; Hammett, strong acids in H_2O , correln., 3283; H_2SO_4 in 70% DMSO (aq.), 1513
 Acids, di-(4-nitrophenyl)methane, with alkoxide bases, 24
 Acrylic acids and esters, ^{13}C nmr, olefinic shieldings, 601
 Activated complex theory, concept of min. state dens., 3386
 Active nitrogen, reacn. with perfluoroolefins, kinetics, 346
 Activity coefficients, of Hammett indicator systems, 2254
 Acylium ions, genern. from acid rearrs. of cyclobutanones, 952
 1-Acyl-2-thiohydantoin, acid hydrol., kinetics, 3767; alk. hydrol., kinetics, 3780
 Adamantanes, 1, 3-dehydro-, synth., 3958
 Adamantanone, oxidn. to lactone by Ce(IV), 2047
 Addition, iodine trifluoroacetate to unsatd. carbohydrates, 507; during nitrn. of polycyc. aromatic compds., 3367; sulfenyl chlorides to olefins, mechm., 2457, 2465
 Adenosine, complex with Cu(II), kinetics of formn., 3117
 Adsorption, active sites in treated hydrogen mordenite from esr studies of adsd. C_6H_6 , 2041; alkylchlorosilanes on quartz cryst., 125; $(CH_3)_2NH$ and $(CH_3)_3N$ at their bp on SiO_2 gel and $SiO_2-Al_2O_3$, 2451; *n*- $C_4H_9NH_2$ on SiO_2 , 907; CH_3NH_2 on SiO_2 gel and $SiO_2-Al_2O_3$ at 266 °K, 1666; H-atoms on glassy surfaces, combn. kinetics using an esr technique, 2305; H_2S (and D_2S) on Al_2O_3 and MoS_2/Al_2O_3 by ir, 3416; SO_2 on $\gamma-Al_2O_3$, calorimetric heats below monolayer coverage, 2537; SO_2 on magnesia at 423 °K, ΔH_{ads} , 2817; SO_2 on SiO_2 gel, calorimetric heats, 1241
 Alcohols, assocn. in nonpolar solvents from dipole moments and dielec. relaxn. times, 99; fluorinated, synth. and acidity, 512; 2-propanol oxidn. by Ru(IV), kinetics and mechm., 2000
 Aldehydes, from alcohols, by CrO_3 -graphite oxidn., 3058
 Aldehyde semicarbazone, oxidn., mechm., 4066
 Alkaloids, canconine, rearr. of, 3900; delphinine, total synth. of relay compd., 1925; indole-pyridines of *Nauclea diderrichii*, 1486; misc., isoln. from *Nauclea diderrichii*, 1496; neothiobinupharidine sulfoxide, isoln. and struct., 1968; nucl. relaxn. times of vindoline, pulsed nmr, 497; of *Nuphar luteum*, isoln. and struct., 1831, 1968; (\pm) jochrobirine synth., 1819; ($-$)-ormocastriene, ($-$)-18-epiormosanine, ($-$)-ormosanine, and (\pm)-priptanthine, isoln. and struct., 1639; oxindole, molec. and cryst. struct., 2407; simple β -carboline and pyridines of *Nauclea diderrichii*, 1478; struct. of dehydrocancantrine-A and -B, 862; synth. model for anhydroryanodol, 4013; synth. of "Schopf's base VI" and derivs., 2022
 Alkanes, ΔH_{mix} with CCl_4 , 3799; liq., free ion yields and electron ranges in radiol., 2667
 Alkenes, mechm. of photoisomerizn. in presence of H_2S , 2400; mechm. of photol. in vac. uv, use of H_2S as radical scavenger, 2391; oxidn., by singlet oxygen or triphenylphosphite ozonide, isotope effects in, 4034
 Alkoxides, fluorinated, of trans. elements, 939
 2-Alkoxytetrahydrofurans, hydrogenol. with AlH_2Cl , 1502; influence of C-2 and C-5 substituents on the direction of C—O bond cleavage by AlH_2Cl , 1502
 Alkylation, reductive, of enones with allyl bromide, 1944
 Alkyl bromides, from bromination of alkanes, 3109
 Alkyl chlorides, decompn. catd. by Ti films, 2167
 Alkylchlorosilanes, adsorp. on quartz, 125
 Alkylchlorosulfates, hydrol. mechm. and isotope effects, 434
 Alkylperoxy radicals, Polanyi correlns. for E_{act} of abstrn. from hydrocarbons, 2285
 Allene, catd. hydrogn. over various Pt metals, 1793
 Allyl alcohols, ^{13}C nmr, 1361
 Allyl ions, ionizn. potl. and thermochem., 3973
N-Allyl urea, and *N*-allyl thiourea, complexes with Ni(II) and Co(II), prepn. and spect., 2603

- Altersolanol B, correln. with bostrycin, stereochem., 122
- D-Altrose, synth. from 1,2,5,6-di-*O*-isopropylidene- α -D-allofuranose by acetol., 1092
- Alumina, adsorpn. of Co^{2+} from aq. soln. by Al_2O_3 , 1642; and alumina-supported MoS_2 , cats. for decompn. of H_2S , 3416; cat. of decompn. of triazines, 2544; as cat. for α -pinene isomerizn., 61; γ -modificn., calorimetric ΔH_{ads} of SO_2 below monolayer coverage at 423 °K, 2537; γ -modificn., pore struct. by electron microscopy and adsorpn. studies, 2537
- Aluminum, anodic oxidn., kinetics, 3259, 3267
- Aluminum(III) halides, adducts with DMSO, struct. from ir and Raman spect., 1157
- Amides, dehydrn. to nitriles by phosphonitrilic chloride, 3857; protonation, N vs. O, 771
- Amines, aliphatic, electrons trapped in glasses of, optical and esr spect. and kinetics of bleaching, 2699; complexes with alkylammonium pentafluorosilicates, disson., 3450; prepn. of di-(α -*t*-butylbenzyl)amine, 669; as quenchers, of triplet state of acetone in soln., mechm., 3426
- Amino acids, coupling to amino sugars by 2,4,6-trichloro-*s*-triazine, 1987
- 2-Amino-4-*t*-butylcyclohexanols and derivs., synth. and conformn., 3998
- Aminocholestanes, mechm. of deamination, confign. of prods., 364
- Aminochromes, reactn. of epinochrome with thiols, 3360
- Aminopolycarboxylate complexes, polarog., dynamic and equil. data, 3821
- 3 β -Amino steroids, synth. and stereochem., 3993
- 11 β -Amino steroids, synth. and stereochem., 3993
- Amino sugars, coupling to amino acids by 2,4,6-trichloro-*s*-triazine, 1987
- Ammine complexes of Os(II), 3093
- Ammines, of trans. metal fluorides, therm. anal., 567
- Ammonium perchlorate, elec. conduct. of pure and doped crysts., mechm., 3154
- Anation, Fe(III) in aq. soln., 194
- 5 α -Androstane, -17 β -ol, spiro-3 α - and -3 β -oxirane, reactn. with 2-lithio-1,3-dithiane, 1407
- Anharmonicity, influence on X—H stretching freq. in ir, 3161
- 2,2'-Anhydronucleosides, intermeds. in synth., 246
- Anhydropenicillins, allylic bromination of chlorination prods., 2898; chlorinol., 2894
- Anhydryanodol, model for synth., 4013
- Aniline(s), σ -complex with 1,3,5-trinitrobenzene, 129; as Hammett bases, in 70% DMSO (aq.), 1513
- Anilinium ions, acidity in DMSO— H_2O , 474
- Anionic polymerization, nmr of aromatic anions, 1246
- Anisotropic hyperfine interactions in π -radicals, 139
- Anodic oxide films, on Al. ac impd., trans. response, 3267; theory of ionic conductn., 574; theory of transients, 3259
- 9,10-Anthraquinone-2-sulfonate, photol. in aq. soln., prod. variation with reactn. condns., 381
- Antimonates, of Cd, Ca, Mn, and Pb of the pyrochlore type, prepn. and struct., 3648
- Antimonic acid, dehydr./decompn. prods. and Mössbauer spect., 690
- Antimony oxides, Sb_2O_3 , cryst. struct. and Mössbauer spect., 690
- β -Antimony tetroxide, Mössbauer spect. and therm. stabil., 690
- Aquation (see Hydration)
- Aralkyl carbonates, decompn. kinetics and mechm., 1770
- Argon, intermolec. potl. from crossed-beam expts., 892; radiol., effect of elec. field, 1617
- Aromatic carbanions, nmr, 1246
- Aromatic ketones, nature of excited triplet states, solvent and heavy atom effects in S \rightarrow T absorpn., 3601
- Aroyl cyanide, from aromatic aldehyde, 4066
- Arsenic, electrode pots. of As(III)/As(0) in LiCl—KCl eutectic, 3911
- Arsine(s), dimethyl-, reactn. with perfluorocycloolefins, 1421; dimethylido-, vibr. assignments and normal coord. anal., 2691; di-tertary, reactn. with iron carbonyls, 2182; subst., complexes with Cu(II), prepn. and props., 1269
- 2-Aryloxytetrahydrofurans, AlCl_3 -catd. cleavage to phenols and reart. to *o*- or *p*-(2-tetrahydrofuran-yl)phenols, 3639; exclusive *exo* C—O bond cleavage by AlH_2Cl , 3639
- Aryl sulfonyl chloride, addn. to olefins, mechm., 2457, 2465
- Atomic beams, Ar + Ar crossed, derivn. of intermolec. potl., 892
- Atoms, recombn. rate const., theory, comparison of shock-tube and nozzle values, 3832; theory of recombn. kinetics, 897
- Atropine, and related esters, synth. and solute conformn., 803
- Autoxidation, correlns. of rate data for hydrocarbons, Polanyi reln., 2285; vinyl compds., kinetics and mechm., 2298
- Azacephem, prepn. from S-free penicillin derivs., 2902
- 1-Azaphenothiazine, chloroacetyl. of, 1026; spect. props. of some derivs., 1026
- Azetidinones, prepn. from S-free penicillin derivs., 2902
- Azide ion, as probe for k_t process in solvol. reacns., 1371
- N*-Azido dibenzylamine, decompn., *N*-nitrenes in, 1778
- Aziridines, therm. decompn., 2236
- Azirines, 3-chloro-3-aryl-, mechm. of pyrol., 3009
- Azlacones, oxidn. by O_2 , 2851
- Azodicarbonyl compounds, acid-catd. isomerizn. of adducts, 1568; Diels—Alder reactn. with cyclopentadiene, 371
- Azomethine ylides, tetrasubst., genern. and cycloaddns., 534
- Bamford—Stevens reaction, equilenin methyl ether *p*-toluenesulfonylhydrazone, 766
- Barbiturates, reactn. with diazomethane, struct. of prods., 880
- Barium cadmium chloride, struct. type and stabil. of hydrates, 3648
- Basicity, of anilines in DMSO— H_2O , 474; ethers in H_2SO_4 , by nmr, 445
- Benzene, complexes with Ru(II), prepn. and reacns., 3063; esr of cation radical dimer addd. on treated mordenite, 2041; fluorine-subst., assignment of transns. in vac. uv, 543; subst., polymerizn. by ultrasound, 1743
- Benzenesulfonic acids, halogeno-, sulfonation, 1574
- Benzenethiols, subst., oxidative addn. to Ir(I) complexes, kinetics, 1868
- Benzil tetramethyl diketal, intermed. in electrochem. synth. of trimethyl orthobenzoate from α,α' -dimethoxystilbene, 3424
- Benzocycloalkenes, fluorescent and triplet-state yields, variation with ring size, 3298
- Benzofurans, formn. in thermol. of *o*-hydroxyacetophenone, mechm., 2513; electroredn. of subst., kinetics, 263

- Benzoic acid, photol. of vap., 2017
 Benzophenanthridine alkaloids, synth. of *N*-norchelerythrine, 1544
 Benzophenone, photosensitizn. of isomerizn. of oxazoles and isoxazoles, 3730
 Benzoxonium ions, uridine series, intermeds. in synth., 246
 Benzoylation, acetyl., selective, 233; selective from acetals, 253
 1-Benzyl-2-carbomethoxy-3,3-dimethylaziridine, synth. and reacns., 4061
 Benzyl chlorides, subst., solvol. in EtOH-H₂O, mechn., 2318
 3-Benzylidene camphors, redn. by complex hydrides, 438
 Benzylidenemalononitrile-trialkylphosphine 1:1 adducts, struct. by nmr, 1713
 Benzyl naphthyl ethers, therm. rearr., 259
 Borates, formn. from catechol and B₂S₃, 1675
 Bicyclo[3.3.1]nonanes, -2,9-disubst., synth., 3846
 Bicyclo[3.3.1]nonan-2-ol-9-one, *endo* and *exo*, and derivs., prep., 3846
 Bimolecular lipid membranes, depositn. of Ag⁺ by iodine, 1448
 Bimolecular reactions, dynamics and potl. surfaces, theory, 3916
 Bindheimite, struct. type and lattice parameter, 3648
 Biosynthesis, lycopodium alkaloids, 2591; trichothecin, 3310
 Biphenylene, formn. by thermol. of quinones, 270
 Birch reduction, α,ω -diaryllkanes, triphenylmethanes, 1249
 Bismuth trichloride, nqr. spect. and coupling const., 2586
 Block synthesis, oligoribonucleotides, 1283
 Bond-dissociation energies, $D[(CH_3)_3Pb-CH_3]$ from pyrol. in PhCH₃ carrier, 2639
 Boranes, triacetylenic-, reacn. with ethyl diazoacetate, 1105
 Boron sulfide, reacn. with compds. containing multiple functional grps., 1675
 Boron trifluoride, complex with tetramethylurea, struct. from nmr data, 713
 Borontrihalides, adducts with CH₃CN, disocn. and exch. by nmr, 1262
 Brillouin spectroscopy, in molten salts, 2704
 Bromination, of acetone, bromoacetone and 1,1-dibromoacetone, kinetics and mechn., 3233; alkanes, by Br₂ and HgO, 3109; benzylidenuridines with NBS, 246; 2-butanone, acetate-catd., kinetics and mechn., 3229; *cis*-5-cyclooctene-1,2-dione and bis-ethylene ketal, transannular bonding in, 1548; Me enol ethers of cyclohexane-1,3-diones by NBS, 104
 Bromine, effects of on rates of enolizn. of α -bromo ketones, 3242; radioactive, hot-atom chem. of BrMn(CO)₅, 961
 Bromine atom, reacn. with CCl₄ in gas phase, 1785
 Bromine monoxide, as brominating agent, 3109
 Bromoalkanes, dipole moments in cyclohexane, internal rotns., 2031
 2-Bromoethanol, calcn. of force consts., 152
 2-Bromopropene, photoelectron spect., assigns. and interpret., Br lone pair- π electron interact., 2642
 2-Butanone, bromination and H-exch., kinetics and mechn., 3229; H-D₂O exch., rate ratio and mechn., 3239
 Butene-2, *cis*- and *trans*-, photol. in vac. uv, mechn., 2823
 2-Butenoic acid, *cis*- and *trans*-, therm. equil., 1224
 Butoxy radical, reacn. with C₃H₈, *c*-C₃H₆, 1531
n-Butylamine, adsorpn. on SiO₂, 907
t-Butyl chloride, hydrol. mechn., role of ion-pair intermeds. from kinetic data, 167
 1-*n*-Butyl-2-isopropylimidazole, synth., 3472
t-Butylperoxy radical, esr of terminally ¹⁸O-labelled species, 1981; Polanyi correlns. for E_{act} of abstrn. from hydrocarbons, 2285; rate const. for addn. to vinyl compds., 2298
 Cadin-4,10(15)-dien-3 α -ol, synth., 3272
 Cadmium(II), complex with phenylsulfoxycetic acid, pren. and props., 3202
 Cadmium atom, reacn. of Cd(³P₁) atoms with cyclo-C₆H₁₂ vap., 2010
 Caesium oxotetrafluorovanadate, cryst. struct., 3700
 Calcium carbide, partial phase diagram of system CaC₂-CaCl₂, disocn. in molten CaCl₂, 839
 Camphor, 3-benzyl-synth. and redn. by complex hydrides, 1376
 Cancentrine, an alkaloid of *Dicentra canadensis*, struct., 853
 Carbamates, hindered rotn. by nmr, 1594; trimethyltin, nmr and rotn. barriers, 1386
 Carbanions, 2,4-diazapentadienyl anion, mechn. of cyclizn., 678
 Carbohydrates, base-catd. degradns., 2203; chain extension via epoxides, 226; ¹³C-labelled, D-glucose-1- and -6-, L-idose-6-, struct. from nmr, 3667; cryst. struct. of mannan, 2030; 1,2,5,6-di-*O*-isopropylidene-D-hexoses, conformns., 1912; D nmr chem. shifts, 504; glucose-¹³C chem. shifts and electron dens., 814; methyl 4,6-*O*-benzylidene-2,3-dideoxy-3-*C*-nitromethyl- α -D-ribo-hexopyranoside, prep., 1780; nitroolefinic, redn. by NaBH₄, Zn, mechn., 1292; ozonol. of monosaccharide olefin, 2617; photoamidation of an *arabino*-hex-1-enopyranose, 1192; unsatd., addn. of iodine trifluoroacetate, 507
 β -Carbolines, derived from *Nauclaea diderrichii*, 1478
 2-(2'-Carbomethoxy-4'-nitrophenoxy)-1,3,5-trichlorobenzene, cryst. struct., 2979
 Carbon, as support for Pt cat. for mechn. studies of H₂-HDO exch., 3686
 Carbonates, aralkyl, decompn. kinetics and mechn., 1770
 Carbon dioxide, collisional deactivn. of CO₂(^A² Π_u) and -(^B² $\Sigma_u^+) by diat. molecs., 1; MO anal. of electronic spect., 653
 Carbonium ions, cyclohexenyl, rearrs. of, 2939; subst. pentadienyl-, rearr. and cyclizn. rates, 2806
 Carbon monoxide, radiation-induced oxidn., 3508
 Carbon tetrachloride, bromination kinetics in gas phase, 1785; conduct. and visc. of solns. with (*n*-C₄H₉)₄NBr, 1600; ΔH_{mix} with alkanes, 3799; soly. in compressed gases, 660
 Carbonyl sulfide, interpretn. of widths of ir bands in various solvents, 217
N-Carboxyanhydrides, in synth. of dipeptides, 299
 4,6-*O*-(1-Carboxyethylidene), struct. unit in *Klebsiella* capsules, 2382
epi-Carrisone, synth., 340
 Catalysis, base, reacn. of (RO)₂P(O)C(OH)(CF₃)₂, kinetics, 1205; correln. of adsorpn. of H₂ and O₂ on lanthanide oxides with rates of *o*-*p* H₂ exch. and H₂ + D₂ reacn., 490; decompn. of H₂S on Al₂O₃ and MoS₂/Al₂O₃, 3416; H₂-HDO exch. over C-supported Pt, mechn., 3686; H₂-H₂O exch. on Pt-Al₂O₃, 1900; homogen. D₂-H₂O exch., Co(CN)₅³⁻ in, 3144; oxidn. of C₂H₄ with rhodium (III) chlorides, 1698, 1708; α -pinene aromatizn. over Cr₂O₃, 113; α -pinene isomerizn. by Al₂O₃, 61
 Catechol, biborate formn. in reacn. with B₂S₃, 1675
 Cation radicals, derived from dialkoxybiphenyls, struct. from esr, 2141$

- Cavitation, benzene polymerizn. in, 1743
Cell, electrolytic, resistance vs. geom., theory, 2491
Cellulose, molec. conformn., 792
Ceric ammonium nitrate, dethioketalizn., 2718
Cerium(IV), for oxidn. of ketones, 2047; photooxidn. of Hg(I) by, 2413
Cesium, formn. of ^{134}Cs isomers in nuclear reasn. of ^{237}Np with 20–85 MeV ^1H , 1877
Cesium hexafluorocobaltate(IV), mag. susceptibility, reflect. spect., cryst. struct., and electronic confign., 2447
Charge transfer complexes, amines and carbonyl compds., triplet energies from oxidn. and redn. potls., 4052; as intermeds. in quenching of triplet state of acetone by amines, 3426; iodine with cholesterol and phospholipids, 1448
Chloramines, homolytic transannular reacs., 1167
Chlorination, of aromatics with $\text{TiCl}_4/\text{CF}_3\text{CO}_2\text{H}$, 1233
Chlorine atom, reasn. with HI, calcn. of energy distribn. in prods. by modified phase space theory, 633
Chlorinolysis of anhydronicillin derivs., 2894
3-Chloro-3-arylaziridines, mechn. of pyrol., 3009
1- ^{14}C -1-Chlorobutane, treatment with AlCl_3 , mechn., 3179
3-Chloro-3-deoxy-1,2:5,6-di-*O*-isopropylidene- β -D-idose, cryst. struct., 93
Chlorodithioformates, hydrol., kinetics and mechn., 1401
2-Chloroethanol, calcn. of force consts., 152
Chloroethylenes, photocycloaddn. of cyclopentanone, mechn. and stereochem. considerations, 3465
trans-Chloromethylbis(trimethylarsine)platinum(II) hexafluorobut-2-yne, cryst. and molec. struct., 2276
5-Chloro-2,4-pentadienoic acid, and derivs., formn., 2561
Chloropentafluoroacetone, quenching of excited singlet state by alkanes, 1429
Chlorosulfates, bond scission in methanol., 1907
3-Chloro-1,2,5-thiadiazole, vibr. anal. of ir and Raman spect., 627
Chlorothioformates, hydrol., kinetics and mechn., 1401
5 α -Cholestane, spiro-3 α - and -3 β -oxirane, reasn. with 2-lithio-1,3-dithiane, 1407
5 α -Cholestan-2-one, prepn. of 3 α - and 3 β -substd. derivs., 810
5 α -Cholestan-3-one, prepn. of 2 α - and 2 β -substd. derivs., 810
Cholesterol, reasn. with alkyl and aryl phosphites, 2264
Chromia, cat. in α -pinene aromatizn., 113
Chromic anhydride-graphite, oxidn. of alcohols, 3058
Chromium, tricarbonyl-, H/D exch. in complexes, 118
Chromium(III), partial photoresoln. of $\text{Cr}(\text{C}_2\text{O}_4)_2 \text{phen}_2^+$, $\text{Cr}(\text{C}_2\text{O}_4)_2 \text{phen}^-$, and $\text{Cr}(\text{bipy})_3^{3+}$ complexes, 3381; photol. of amine complexes, luminesc., 887
Chromyl chloride, oxidn. of α -pinene, prods. and mechn., 4022
Chrysenes, synth. of substd., 528
 α -Chymotrypsin, selectivity in protective-grp. removal, 2053
Circular dichroism, detn. confign. of nitro sugars by, 1780; diastereomeric Co(III) complexes, 3569; nitrate esters, symmetry rule, 1719; *R*-1,2-propanediamine-copper(II) complexes, 3390
Clathrate hydrate, of HPF_6 , struct. from ^1H and ^{19}F nmr, 3515
Clathrates, ethylene oxide hydrate and deuterate, struct. from ir, 3443
Cobalt(II), adsorpn. of cation from aq. soln. by Fe_2O_3 , Al_2O_3 , and MnO_2 , 1642; chloro-, salt of the aminodiphenylphosphonitrileaminodiphenylphosphonium ion, prepn. and props., 75; electronic spect. in molten sulfate media, 2946; pentacyano-, cat. of D_2 - H_2O exch. by, 3144; pyridine carboxylates and pyridine-3-sulfonic acid complexes, struct., 1307
Cobalt(III), circ. dichroism of diastereomeric complexes, 3569; pentaammine-, aqn. kinetics at high press., 2739
Cobalt(IV), mag. data, reflect. spect., electronic confign., 2447
Cobalt(II) complexes, *N*-allyl urea and *N*-allyl thiourea, spect., 2603
Colchicine, luminesc. in soln., nature of excited states, 1959
Cole-Cole plots, polar solutes in nonpolar solvents, 707
 σ -Complex, between 1,3,5-trinitrobenzene and aniline, 129
Compressibility, isotherm. and adiabatic for tetraalkylammonium bromide, aq., 1094
Conductance, NaNO_3 in H_2O and dioxane- H_2O at 25 $^\circ\text{C}$, 2845
Conductimetry, solns. of NaOH and $\text{Pb}(\text{NO}_3)_2$, 184
Conductivity, (*n*- C_4H_9) $_4\text{NBr} + \text{CCl}_4$ system, 1600; liq. ferric vanadates, 2877; liq. sodium vanadates, 2871; liq. V_2O_5 , 2865
Configurations, acetoxime from ^{13}C nmr, 1956; ethylene sulfite from nmr, 2370
Conformations, acyc. sulfonic esters, from dipole moments, 548; A^{1-2} -interactn. in substd. cyclohexanone oximes, 1051; anal. of phosphorinanes from nmr, 2111; calcd. angle dependence of vicinal ^{13}C -H coupling consts., 2710; cellulose molecule, 792; depend. of N,H coupling consts. on lone-pair orientn. and on proton., 2989; ethylenediamine, calcd. in LCAO-EHMO approxn., 1005; *o*-, *m*-, and *p*-fluorobenzaldehydes from expt. dipole moments, 2890; 4-fluoromethyl-6-methyl-1,3-dioxanes, 412; 5-fluoromethyl-5'-methyl-1,3-dioxanes, by nmr, 423; in furanoses from nmr, 1912; gaseous 1,3-dioxane from microwave data, 1690; geom. of amino grp. in aniline and derivs., 2575; hindered aryl ketyls from esr data, 1427; hindered rotn. in *o*-substd. acetophenones, 2470; lysergic and isolysergic acid dimethylamides by nmr, 3876; $\text{MeOCH}_2\text{CH}_2\text{OH}$ from microwave spect., 1149; nitrate esters, circ. dichroism, 1719; organophosphorus derivs., 2092; PhCH_3 , *p*-fluorotoluene and xylenes, MO calcs., 1852; racemic 4,6-dimethyl trimethylene sulfite, 3892; tetrahedral intermed. during ester hydrol., select. cleavage, 3405; thermo. parameters for formyl grp., 1965
Contact angles, aq. valeric acid on various surfaces, 1613; reln. with drop size for H_2O at bp, 2419
Copper(I), DPPH complexes, struct. and props., 999
Copper(II), bis(dithiocarbamate)-, formn. by displacement from the Ni(II) complex, kinetics, 3384; in cat. of 3-oxoglutarate decompn., 1461; chloro-, salt of the aminodiphenylphosphonitrileaminodiphenylphosphonium ion, prepn. and props., 75; complex with adenosine, formn. kinetics, 3117; complexes with AsH_3 and PH_3 derivs., prepn. and props., 1269; complex with *N*-salicylidene-anthranilic acid, 1609; decompn. of phenoxo complexes, 2792; ethylenediamine complexes, use of ^{63}Cu and ^{65}Cu in vibr. assign., 3866; *R*-1,2-propanediamine complexes, circ. dichroism, 3390; synth. of μ_4 -oxo-hexa- μ -halotetra-copper complexes, 2792; use of isotopes in anal. of ir of complexes, 3866
Copper(II) bis(diethyldithiocarbamate), fast reasn. with pyridine, kinetics from esr data, 2079
Copper orthovanadate, cryst. struct., 3944
Copper(I) sulfate, prepn., cryst. struct., therm. stability, 3872
Copper(I) thiobenzoate, reasn. with org. iodides, 4056

- Corticoids and homo-corticoids, applicn. of 2-lithio-1,3-dithiane reacs., 1414
- Cotton effects, of homodienes, 1433
- Coumarins, isoln. from *Murraya paniculata*, 443
- Coupling constants, long-range, in methylfluoropyridines, 2344
- Crotonic acid, *cis*- and *trans*-, therm. equil., 1224
- Crystal structure, 2-(2'-carbomethoxy-4'-nitrophenoxy)-1,3,5-trichlorobenzene, 2979; $\text{Cd}_2\text{Nb}_2\text{O}_7$ and $\text{Cd}_2\text{Ta}_2\text{O}_7$, 3648; 3-chloro-3-deoxy-1,2,5,6-di-*O*-isopropylidene- β -D-idose, 93; Cs_2CoF_6 and Rb_2CoF_6 , 2447; CsVOF_4 , 3700; Cu_2SO_4 , 3872; $\text{Cu}_3\text{V}_2\text{O}_8$, 3944; cyclotetraphosphazene, $\text{N}_4\text{P}_4(\text{NCS})_8$, 1315; dinitrato-2,2'-dipyridylsilver(II), 315; 1,4-dinitro-2-isopropylimidazole, 3472; 2-(2',4'-dinitrophenoxy)-1,3,5-tri-*t*-butylbenzene, 2972; 2,4-diphenyl-5-(3'-phenyl-2'-thiabutene-4'-yl)-isothiazolium iodide, 324; 3,5-epidithio-2,5-diphenyl-2,4-pentadienylideneaniline, 324; $\text{Hg}(\text{SCN})_2$, 977; $\text{KIO}_3\cdot\text{HIO}_3$, 1134; mannan, 2030; 2-(3'-methyl-4'-nitrophenoxy)-1,3-diisopropylbenzene, 2963; MgV_2O_6 , 3619; $\text{Mn}(\text{NO}_3)_3$ -bipyridyl, 3332; $\text{Na}_4\text{P}_2\text{O}_7$, 2519; oxindole alkaloid, 2407; μ -oxo-bis[oxotrichloro(*O*-perrhenylchloride)rhenium(VI)], 3607; $(\text{PPh}_3)_2\text{PtCl}_2\text{H}_4$, 912; *trans*- $\text{PtClCH}_3(\text{As}(\text{CH}_3)_3)_2\text{C}_6\text{F}_6$, 2276; $\text{ReOCl}_4\cdot\text{H}_2\text{O}$, 1811; Sb_2O_3 , 690
- Cusp-satisfying orbitals, applicn. to two-electron systems, 2887
- 2-Cyanoethanol, calcn. of force consts., 152
- Cyanogen free radical, mechm. of excitn. in active N disch., 2527
- Cyano group, long-range shielding effects, 2351
- Cyclic phosphonium ylides, synth., 3625
- Cyclization, medium-ring chloramine to bicyc. amines, 1167; olefin to aldehyde yielding bicyclo[3.2.1]octanes, 726
- Cycloaddition, photo-, stereospecific, β -subst. styrenes to olefins via S_1 state, 1984; stereoselective, diazomethylphosphonates with olefins, 1078
- Cyclobutanones, acid-catd. ring opening, 952
- Cyclo- γ -cyanoethylations of α,β -unsatd. carbonyl compds., stereochem., 1433
- Cyclohexane, decompn. of vap.-sensitd. by $\text{Cd}(\text{P}_1)_2$, 2010; liq.-vap. equil. in binary systems with acetone and MeOH, and in ternary systems with both, 479; mixts. with *cis*-decalin, vap.-liq. equil. and excess Gibbs free energy, 1978; phys. props. of binary systems with $(\text{CH}_3)_2\text{CO}$, MeOH, and of ternary system with both, 1109
- Cyclohexanecarboxaldehyde, low-temp. nmr, formyl grp. conformn., 1965
- Cyclohexane-1,3-diones, Me enol ethers of, reacn. with NBS, 104
- Cyclohexanone, assocn. with 2,6-di-*t*-butylparacresol from ir, 1199
- Cyclohexenyl cations, rearr. of alkyl grps., 2939; tetraalkyl, equil., 3550
- Cyclohexyl radical, unimolec. decompn., 2010
- Cyclonucleosides, related to uridine, prepn. of ^{13}C -labelled, conforms. by ^{13}C nmr, 773
- Cyclooctadiene-1,2-dione, bis ethylene ketal, prepn., 1548
- 1,5-Cyclooctadiene monooxide, formol. and transannular rearr., 2152
- cis*-5-Cyclooctene-1,2-dione, prepn. and ketalizn., 1548
- Cyclopentadienes, routes to substd., 3186
- Cyclopentadienone, formn. from *p*-benzoquinone, 270
- Cyclopentadienyl cations, from cyclizn. of substd. pentadienyl-, 2806
- Cyclopentadienylideneacarbonyl, formn. in thermol. of *o*-hydroxyacetophenone, mechm., 2513
- Cyclopentadienylmanganese thiocarbonyls, synth. and ir, 598
- Cyclopentanes, and C_5 unsats., γ -radiol. in adamantane matrix, esr of radicals, 3982
- Cyclopentanone, vac.-uv photol., mechm., 3938
- Cyclopentenone, photo-induced addn. to substd. ethylenes, mechm. and stereochem., 3465
- Cyclopentenyl cations, tetraalkyl, equil., 3534
- Cyclopropane, *trans*-1,2-divinyl-, racemizn., 2158
- Cyclopropenyl ion, thermochem. from electron impact, 3973
- Cyclopropylcarbinyl-oxo-carbonium ions, in carbohydrate synth., 2909, 2919
- Cyclopropylmethyl cations, barrier to rotn., 2432
- Cyclotetraphosphazene, cryst. and molec. struct., 1315
- Deactivation, $\text{N}_2^+(B^2\Sigma_u^+)$, $\text{CO}_2^+(A^2\Pi_u)$, and $(B^2\Sigma_u^+)$ by collisions with diat. molecs., 1
- Deamination, aminocholestanes, mechm., confign. of prods., 364
- cis*-Decalin, mixts. with cyclohexane, vap.-liq. equil. and excess Gibbs free energy, 1978
- Decarboxylation, of 3-oxo-glutarate, $\text{Cu}(\text{II})$ catd., 1461; photol. of 2- ^{14}C -3-phenylpropionaldehyde, 593; pyridinecarboxylic acids, mechm., 3017
- Deconjugation of Δ^4 -3-ketosteroids, oxygenation during, 2712
- Dehydroabietic acid, pyrol. at 400–500 $^\circ\text{C}$, mechm., 2224
- Dehydroadamantanes, synth. and reactivity, 3958
- Dehydrocancrinines, alkaloids of *Dicentra canadensis*, isoln. and struct., 862
- Delphinine, total synth. of a relay compd., 1925
- Density, NaNO_3 in H_2O and dioxane- H_2O at 25 $^\circ\text{C}$, 2845
- 3-Deoxy-1,2,5,6-di-*O*-isopropylidene-D-hexoses, conformns., 1912
- 1-Deoxy-D-erythritol, synth., 3373
- 3'-Deoxyguanosine, by reducn. of 8,3'-thioanhydroguanosine, 3276
- Deoxyribonucleotides, synth. without protection of adenine or guanine amino groups, 769
- 2'-Deoxyuridine, prepn. from 2',3'-acetals, 253
- Desorption, H_2 from Pd DTA, 1321
- Deethioacetalization, $\text{Ce}(\text{NH}_4)_2(\text{NO}_3)_6$, 2718
- Deuteration, stereoselectivity of in glycosyl halides, 2617; of tricarbonylchromium complexes, 118
- Deuterium isotope effect, on carbanion reprotonation, 678
- 5,6-Diacetoxy-1-methylindoline, synth. from epinochrome, 3360
- Dialkoxobiphenyls, esr of cation rads., 2141
- Dialkylamino radicals, neutral, reacs. with olefins, 1167
- Dialkyltin(IV)-bisfluorosulfates, -bistrifluoromethanesulfonates, and -bisdifluorophosphates, synth. and vibr. spect., 1843
- trans*-1,2-Diaminocyclohexanetetraacetatomanganate(III), oxidn. of substd. phenols by, mechm., 3437; reacn. of K salt with MeOH, mechm., 3432
- α,ω -Diarylalkanes, Birch redn., 1249
- Diastereoisomers, steroidal, detectn. of diastereotopic grps. with $\text{Eu}(\text{DPM})_3$, 2788
- Diatomic molecule, disocn. kinetics, theory, 3832
- Diazoacetates, reacn. with trialkynylboranes, propargylic esters from, 1105

- α -Diazoanilides, thermol. and photochem. decompn. in various alcohols, 3719
- Diazoesters, photol. in CH_3CN , 3730
- Diazomethane, reactn. with barbiturates, 1253; reactn. with barbiturates, struct. of prods., 880
- Dibenzo[a,e]cyclooctatetraene, nmr and correction to ir, 2364
- 1,2-Dibromoethylene, *cis*- and *trans*-, photoelectron spect., assigns. and interpretn., Br lone pair - π electron interactn., 2642
- 2,6-Di-*t*-butylparacresol, assocn. with cyclohexanone from ir, 1199
- Di-*t*-butyl peroxide, photochem. decompn., 1531; photol. in soln. at low temp., formn. of trioxide, 1981
- Di-*t*-butyl trioxide, formn. in photol. of (*t*-BuO)₂ in soln. at low temp., 1981
- Dielectric cell, for low temps., 3046
- Dielectric constants, losses for solns., from microwave data, 707; 1-propanol, 2-propen-1-ol, and 2-propyn-1-ol in nonpolar solvents, 99
- Dielectric relaxation, bromoalkanes in cyclohexane, 2031; org. chelated ring systems, evidence for formn. of H-bonds with 1,4-dioxane, 2799; 1-propanol, 2-propen-1-ol, and 2-propyn-1-ol in nonpolar solvents, 99
- Dielectron species, intermeds. in photol. of aq. OH⁻, 2059
- Diels-Alder reaction, azodicarbonyl compds. and cyclopentadiene, 371; of dienes, comparison of mechm. with dye-sensd. photooxidn., 932; orientn. of BF₃-catd. reactns., reversal of usual route, steroid synth., 2371; quinodimethide intermed., 1098; retro, mass spectral fragmentn. of *gem*-diesters, 1535; retro, mass spectral fragmentn. of dihydropyran esters, 1539; retro, for prepn. of substd. cyclopentadienes, 3186
- Diene rules of Moscovitz and Burgstahler, exceptions, 1433
- Dienes, conjd. cyc., photoaddn. by *N*-nitrosamines, 1065; Cotton effects, 1433; dye-sensd. photooxidn., role of O₂(¹Δ_g), 932
- gem*-Diesters, mass spect., 1535
- Diethyl malonate, reactn. with carbohydrate epoxides, 226
- Diethylsulfamoyl chloride, Δ*C*₂⁺ for hydrol., 946
- Differential scanning calorimetry, in desorpn. of H₂ from Pd, 1321
- Differential thermal analysis, Cu₂SO₄, 3872
- Diffusion, hydrocarbons in air, 31; Pd and CO in Ar matrix, kinetics, applicn. to ir assigns. of Pd(CO)_n, 3587
- Diffusion coefficients, binary, He in CO₂, N₂O, or SF₆, 1874
- Diffusion flame, use in study of N + perfluoroolefins, 346
- Difluorochlorine(III) cation, ¹⁹F nmr, 3409
- Dihalobis(pentane-2,4-dionato)rhenium(IV), struct., 1797
- (+)-Dihydrocarvone, conversion to (+)-occidentolol, 340
- Dihydropyran, ozonol. for prepn. of 2-alkoxytetrahydrofurans, 1783
- Dihydropyran *gem*-diester, mass spect., 1539
- 1,2-Dihydropyrazines, prepn., 2236
- 4,4'-Dihydroxybenzil, lack of photoreactn., 2499
- 2,3-Dihydropyridine, complex with Fe(III), stabil. const., 1649
- Diimide, *N*-benzoyl-*N'*-1-cyanocyclohexyl, therm. decompn. in PhCH₃ soln., 2143
- 1,2:5,6-Di-*O*-isopropylidene-D-hexoses, conformns., 1912
- 1,6-Diketones, from fatty acids and C₂H₅HgCl, 2786
- N,N*-Dimethylacetamide dimethyl acetal, reactn. with diols, 233
- Dimethylamine, Δ*H*_{sub}, at 280 °K on SiO₂ gel and SiO₂-Al₂O₃, 2451
- Dimethylarsine, reactn. with perfluorocycloolefins, 1421
- N,N*-Dimethylbenzamide dimethyl acetal, reactn. with diols, 233
- 1,4-Dimethylnaphthalene, addn. of acetyl nitrate, 3988
- (-)-*cis*-4-[1'-(*R*)-5'-Dimethyl-3'-oxohexyl]-cyclohexane-1-carboxylic acid, isoln. from Douglas-fir wood, 2380
- 1,3-Dimethylpiperidin-4-ols and esters, synth., confign., and conformn., 803
- 2,2-Dimethylpropane, radiol., effect of elec. field, 1617
- Dimethyl pyrrole, 2,5- and 2,4-derivs., mechm. of photol. of vap., 1678
- Dimethyl sulfoxide, acidity functions in, 1513; adducts with AlCl₃ and AlBr₃, struct. from ir and Raman spect., 1157; aq., acid-base equilibria in, 474
- 4,6-Dimethyl trimethylene sulfite, racemic, conformn. by electron diffract., 3892
- Dinitrato-2,2'-dipyridylsilver(II), cryst. struct., 315
- 1,4-Dinitro-2-isopropylimidazole, synth. and cryst. struct., 3472
- 2-(2',4'-Dinitrophenoxy)-1,3,5-tri-*t*-butylbenzene, cryst. struct., 2972
- Di-(4-nitrophenyl)methane, kinetics of proton abstrn. by alkoxide bases, 24
- Diols, protecting group for, 233; sym., monotrityl ethers, synth., 2892
- Dioxane, mixts. with H₂O as solvent for LiClO₄, thermo. props. of soln., 1627; phase diagrams of system with H₂O-NaCl, 3388
- 1,4-Dioxane, H-bonds with org. hydroxyl compds., from dielec. relaxn. data, 2799
- 1,3-Dioxane(s), 5-fluoromethyl-5'-methyl-, nmr and conformn., 423; 4-fluoromethyl-6-methyl-, nmr and conformn. anal., 412; rotl. spect. in 8-40 GHz region, conformn., 1690
- Diphenylcyclopropenethione, reactns. with pyridinium imines, 584
- 1,3-Diphenyl-3-dicyanomethylenecyclopropene, improved synth., 534
- Diphenyl ethers, rotl. barriers in, 353
- 1,6-Diphenyl-1,3,5-hexatrienes, synth., 528
- 2,3-Diphenylindole, reactn. with KMnO₄, struct. of prod., 3397
- 2,4-Diphenyl-5-(3'-phenyl-2'-thiabutene-4'-yl)-isothiazolium iodide, cryst. struct., 324
- Diphenylphosphine, reactn. with 1-dimethylarsinopolyfluorocycloolefins, 1421
- Diphenyls, bridged, cryst. struct., 2963, 2972, 2979
- 1,4-Diphosphorins, synth., 3625
- Dipole moment(s), bromoalkanes in cyclohexane, 2031; 1,3-dioxane in gas phase, 1690; *o*-, *m*-, and *p*-fluorobenzaldehydes, conformns., 2890; MeOCH₂CH₂OH, 1149; org. chelated-ring systems, evidence for formn. of H-bonds with 1,4-dioxane, 2799; 1-propanol, 2-propen-1-ol, and 2-propyn-1-ol in nonpolar solvents, 99; sultines, sultones, and thiosultones, 548
- Dipyrrylmethane, aminomethyl-, formyl-, synth. 2652
- Disaccharides, synth. of 6-*O*-(4-*O*-methyl-β-D-glucopyranosyl)-D-galactose, 1424
- Dissociation, dil. diat. gas, theory of kinetics, 897
- Dissociation energy, D[(CH₃)₂Sb-CH₃], 966
- Diterpenes, tetracyc., grandifloreneic acid, struct., 109

- Diterpenoids, synth. lambertianic acid, 3749
 1,3-Dithianes, 2-lithio-, reacns. with spiroepoxides, 1407;
 stereospecific reacns. with epoxides, 810
 Dithiolium salts, reacn. with S, 2568
trans-1,2-Divinylcyclopropane, racemizm., 2158
 Djengkolic acid peptides, synth., 1633
 11-Dodecenoate ester, ozonol., mechm., 4029
- Electrical conductivity, pure and doped NH_4ClO_4 crystals, 3154
 Electrochemical reduction of silver ion, on cholesterol membrane, 1448
 Electrochemical synthesis, CF_3CD_3 and $\text{C}_2\text{F}_5\text{CD}_3$, 3084;
 triMe orthobenzoate from α,α' -dimethoxystilbene, 3424
 Electrochemistry, effect of anions on kinetics of anodic oxidn. of MeOH, 1891; electrode pots. of Ru(III)/R(0) and As(III)/As(0) in fused LiCl-KCl eutectic, 3911; ionic assocn. and conduct. of electrolytes in CF_3COOH , 3789; redn. of *as*-triazines, 1581
 Electrocyclic reaction, ring closure of a carbanion, 678
 Electrode kinetics, for redn. of subst. benzofurazans, 263
 Electrolytic cell, resistance vs. geom., theory, 2491
 Electron diffraction, study of racemic 4,6-dimethyl trimethylene sulfite, 3892
 Electronic spectrum (see also Uv spectrum), anal. of spect. and struct. of HCN and CO_2 , 653; Co(II) in molten sulfate media, 2946; complexes of pyridine thiols with metal ions, 3488; 2,3-dihydropyridine and complex with Fe(III) in chloride med., 1649; fluorobenzenes, assignment of electronic transns., 543; H_2CO , MO anal., 646; Ni(II) and Co(II) complexes with *N*-allyl urea and *N*-allyl thiourea, 2603; Os(II)-amine complexes, 3093
 Electron paramagnetic resonance (see ESR)
 Electrons, calcn. of mobility in liq. CH_4 , 3379; dissociative attachment to org. halides, kinetics, 2702; hydrated, rate of reacn. with papain in aq. soln., 2833; kinetics in radiol. reacns. 2729; mobilities and ranges in liq. alkanes during radiol., 2667; ranges in liq. hydrocarbons during radiol., correln. with positronium-annihilation rates, 2697; solvated, reacn. rates with H_{mol}^+ in H_2O and ROH, solvent struct. effects, 3073; trapped in amine glasses, optical and esr spect. and kinetics of bleaching, 2699; trapped in irradiated propylene carbonate glasses, esr and opt. spect., 782
 Electroreduction, of subst. benzofurazans, kinetics, 263
 Elimination, base-catd. of 4-*O*-substituents in carbohydrates, 2203; mechm. of therm., from *N*-methyl-4-alkoxy-pyridinium iodides, 1188; 1,3-, from 3-phenylpropyl-trimethylammonium ion, 2332; therm., from *N*-methyl-4-alkoxy-pyridinium iodides, 1181
 Emission spectrum, from $\text{CN}(\text{B}^2\Sigma^+ \rightarrow \text{X}^2\Sigma^+)$ in active N disch., mechm. of excitn. of CN, 2527
 Energy barrier, in theory of bimolec. reacns., 3916
 Energy distribution, in prods. of Cl + HI, modified phase space theor. calcn., 633
 Energy transfer, intramolec., in photol. of 1,1,1-trichloro-2,2-bis(5-chloro-2-methoxyphenyl)ethane, 55
 Enol borinates, regiospecific synth. of α -haloketones, 2387
 Enolization, of α -bromo ketones, rates, 3242
 Enone oxides, stereochem. from nmr, 1065
 Entropy, theory of ΔS_{mix} in ternary molten salts, 1345
 Enzyme kinetics, math. soln. of non-steady-state eqns., 1440
 Enzymes, hydrol. of esters by α -chymotrypsin, 2053
 3,5-Epidithio-2,5-diphenyl-2,4-pentadienyldeneaniline, cryst. struct., 324
 Epimerization equilibrium, in methyl 3-deoxy-3-nitrohexopyranosides, 1216
 Epinochrome, reacn. with thiols, 3360
 Episulfides, stereoisomerizm. in DMF, 3930
 Epoxides, stereospecific reacn. with 1,3-dithiane anions, 810
 ESR, benzene add. on hydrogen mordenite, 2041; *t*-BuOO radical, 1981; calcn. of anisotropic proton tensors, 139; conformn. aryl ketyls, 1427; Cu(I)-DPPH complexes, 999; electron distribn. in ferrocene ketyls, 1825; electrons trapped in amine glasses, kinetics of therm. decay, 2699; *g*-values of thioketyls, 1390; H-atoms add. on glassy surfaces, combn. kinetics, 2305; γ -irrad. acetylacetone, confign. of enol radical from, 1096; γ -irradn. single cryst. of D-tartaric acid, 3706; kinetics of self-reacn. of peroxy radicals, 2374; Mn^{2+} in MgV_2O_6 crystals, 3619; phenalene anion radical, conformn., 1523; prods. of radiol. of $\text{K}_4\text{Ru}(\text{CN})_6 \cdot 3\text{H}_2\text{O}$, 162; radical prods. of γ -radiol. of taurine powder and single crystal, 43; radicals produced in γ -radiol. of C_5 hydrocarbons in adamantane matrix, 3982; semiquinone radicals, decay kinetics, 3052; struct. of rad. cations derived from dialkoxybiphenyls, 2141; study of Rh(I) oxidn. by O_2 , 590; tyrosyl radical from photodecompn. of tyrosine in alk. soln., 3849; use to study fast reacn. between Cu(II) *bis*-(diethyldithiocarbamate) and pyridine, 2079
 Ester hydrolysis, substit. and solvent isotope effects, 1886
 Esters, aromatic, hydrol. by α -chymotrypsin, 2053; hydrol., importance of conformn. in the tetrahedral intermeds., 3405; trifluoroacetates, solvol. mechm., 2175
 Estrone, synth. via Diels-Alder routes, 2371
 Ethers, aliphatic, pK_{BH^+} by nmr, 445
 Ethyl diazomalonanilate, photol. in CH_3CN , 3730; photol. and thermol. in alc. soln., 3719
 Ethylene, cat. oxidn. by rhodium(III) chlorides, 1698, 1708; prepn. of adduct with Zeise's salt, struct. from ir, 1596
 Ethylenediamine, calcn. of conformns. in LCAO-EHMO approxn., 1005
 Ethylene oxide, struct. of and H-bonds in H_2O and D_2O clathrate, 3443
 Ethylene sulfite, nmr, coupling consts. and configns., 2370
 Ethyl fluoride, photol. at 147 nm in gas phase, 1443
 3-Ethyl-3-pentanol, ΔH_{mix} and assocn. in CCl_4 , 3207
 Ethyl thyl radical, addn. to olefins, 1734
 Europium, shift reagent binding consts. and stoichiometry for $\text{Eu}(\text{DPM})_3$ and $\text{Eu}(\text{fod})_3$ with *n*- $\text{C}_5\text{H}_7\text{NH}_2$ and *neo*- $\text{C}_5\text{H}_{11}\text{OH}$, 2119
 Excess Gibbs free energy, cyclohexane-*cis*-decalin mixts., 1978
 Exchange, D_2 - H_2O , $\text{Co}(\text{CN})_5^{3-}$ cat. in, 3144; H/D, in tricarbonylchromium complexes, 118; H- D_2O for 2-butanone, kinetics and mechm., 3229; H- D_2O in 2-butanone, rate ratio and mechm., 3239; reacn. of N and N_2 , 1437
 Factor analysis, applicn. to retention index data in glc, 448
 Fatty acids, reacn. with $\text{C}_2\text{H}_5\text{HgCl}$, 2786
 Fenton's reagent, mechm. of reacn. with 9,10-anthraquinone-2-sulfonate, 381
 Ferric vanadates, elec. conduct. of liq., 2877
 Ferrocene ketyls, electron distribn. from esr, 1825
 Field effects, in reln. to the Hammett eqn., 1030

- Films, anodic oxide, ionizn. and conducn., theory, 574
 Fischer-indole synthesis, use in the synth. of new ring systems, 3900
 Fission, formn. of ^{134}Cs isomers in nuclear reacr. of ^{237}Np with 20–85 MeV ^1H , 1877
 Flavans, from 3-carene-2,5-dione by acid-catd. rearr. and dimerizn., 1276
 Fluids, molec. distribn. functions, calcn. isotherm. compress., 3135
 Fluorescence, benzocycloalkenes, variation of yield with ring size, 3298; chloropentafluoroacetone, quenching by alkanes, 1429; and phosphoresc., 2,3-pentanedione in gas phase, mechm., 1331, 1338
 Fluorides of metals, ir and therm. decompn., 1529
 Fluorinated aromatic alcohols, synth. and acidity, 512
 Fluorinated esters, synth., 512
 Fluorinated vinylic alcohols, synth. and acidity, 512
 Fluoroalcohols, assocn. and H-bonding from ir data, 296
 Fluorobenzaldehydes, conformns. of *o*-, *m*-, and *p*-isomers from exptl. dipole moments, 2890
 Fluorobenzenes, far uv, assignment of electronic transns., 543
 Fluorocarbon-bridged ligands, in iron carbonyl complexes, 2182; new and improved synth., 1421
 Fluorosilicates, penta-, amine adducts of salts, dissocn., 3450
 Folic acid, head-to-tail intermolec. assocn., 2357
 Formaldehyde, mechm. of pyrol., 992; MO anal. of electronic spect., 646
 Formates, of alk. metals and alk. earths., liq.-sol. equil. of mixts., 1972
 Formation constants, possible errors in successive constns., 641
 Formolysis, of 1,5-cyclooctadiene monoepoxide, trans-annular rearr. in, 2152
 Free radical-metal complexes, esr, 999
 Free radicals, comparison of reactivity of radicals from different sources, 1531; from cyclopentanes and cyclopentenes, in adamantane matrix by γ -radiol., esr, 3982; SO_3^- and $\text{H}_2\text{NCH}_2\text{CH}_2\text{SO}_3^-$ in γ -radiol. of solid taurine, 43
 Fulvic acid, acidity, origin, and titrn., 2680
 Furanaldoximes, nmr and MO calcns. of conformns., 274
 Furano-diterpenes, synth. lambertianic acid, 3749
 Furazan, anal. of uv spect., 2088
 Fused salts (see Molten salts)
- Gallium(III)-trisfluorosulfate, synth. and ir, 452
 Gas chromatography, anal. CF_4 and CO_2 in presence of large excess of O_2 , 2935; applicn. of factor anal. techniques to retention index data, 448
 Gases, sepn. of mixts. by accommodation pumping, 957; soly. in H_2O , thermo. data, 133
 Gas-solid organic reactions, isobutene and *p*-phenylphenol, 2882
 Germane, bromo-, improved prepn., 1607
 Germanium, hydrazines, reacr. with BX_3 , CO_2 , CS_2 , 562; methyl germlyhydrazines, prepn. and props., 553
 4-*O*- β -D-Glucopyranosyl-L-rhamnose, synth., 3373
 Glutathione, synth. of oxidized form from djenkolic acid, 1633
 Glycopyranosiduloses, synth., 2928
 Glycosides, reactivity of α - and β - to ozone, conformnl. reasons, 3402
 Grandiflorenic acid, struct., 109
- α -Haloesters, regiospecific synth. from enol borinates, 2387
 Halogenation, of aromatics with $\text{TiCl}_4/\text{CF}_3\text{CO}_2\text{H}$, 1233
 α -Haloketones, regiospecific synth. from enol borinates, 2387
 Halo-*exo*-2-norbornyl acetates-*endo*-6-*d*, with *anti*-7- and *syn*-7-, from halo-nortricyclanes, 2163
 Hammett acidity functions, activity coeff. ratios, 2254; strong acids in H_2O , correln., 3283
 Hammett correlations, 3-benzylidene camphors and substit. effects on redn., 438
 Hammett indicators, anilines in aq. H_2SO_4 , 581
 Hammett relations, field and resonance effects in theory of, 1030; in hydrol. of 1-acyl-2-thiohydantoins, 3767
 Hard-soft-acid-base theory, applicn. in reacr. of substd. phosphines and sulfenes, 866
 Heat capacity of activation, hydrol. of *t*-BuCl in tetrahydrofuran-water mixts., 1353; hydrol. of sulfamoyl chlorides, 946; solvol. of *t*-BuCl in H_2O , 167
 Heavy-atom effect, in S \rightarrow T absorpn. of aromatic ketones, 3601
 Heavy water (see Deuterated water)
 Helium, binary diffn. coeffs. in CO_2 , N_2O , SF_6 , 1874
 Helium isoelectronic series, calcn. of electron dens. at the nucleus, 2887
 Heparin, ^{13}C nmr, 2437
 Hermans' bent-chain struct. for cellulose, 792
 Heterocyclics, a new tetracyc. system, an 8,9-dihydro[1]-benzoxepino(2,3-*c'*)-isoquinoline, 1544
 Hexafluorobenzene, ΔH_f and $\langle \Delta C_p \rangle$ 8–62 $^\circ\text{C}$, 2935
 Hexafluorophosphoric acid, struct. of the clathrate hydrate from ^1H and ^{19}F nmr, 3515
 Hex-4-enopyranosiduronates, from β -elimn., 2203
 High pressure, aqn. kinetics, pentaamminecobalt(III), 2739
 Homoallyl-cyclopropyl interconversion, 2919
 Homoallyl iodides, from Simmons-Smith reacns., 2919
 Hot-atom reactions, in manganese pentacarbonyl halides, 961
 Humic acids, titrn., 2680
 Hydrated electrons, bimolec. reacr. of, 2059
 Hydration, of Ca_3SiO_4 , mechm., 701; ketones in DMSO- H_2O and sulfolane- H_2O soln., 1992; NO_2 , NO_3^- in gas phase, kinetics, 2230; pentaamminecobalt(III) complexes, kinetics, 2739
 Hydrazine derivatives, ^{13}C nmr and struct. of 1-phenyl-4-anilinourazole, 2661
 Hydrazines, methyl germly- and methyl silyl-, reacns. with BX_3 , CO_2 , CS_2 , 562; methyl germly-, prepn. and props., 553
 Hydroboration, α -haloketones and esters from enol borinates, 2387
 Hydrocarbons, bromination by Br_2 and HgO , 3109; cyc. vicinal dimethylene, synth., 795; diffn. in air, 31; soly. in H_2O , thermo. data, 133
 Hydrogen, adsorpn. on lanthanide oxides, 490; catd. isotope exch. with H_2O , 1900; desorpn. from H_2 , DTA, 1321; Hx. with HDO over C-supported Pt, mechm., 3686
 Hydrogenation, of allene, catd. by various Pt metals, 1793; homogen. cat. by Rh-phosphole complexes, 3714
 Hydrogen atom, adsd. on glassy surfaces, combn. kinetics using an esr technique, 2305; recomb. kinetics, theory, 3832
 Hydrogen bond(s), assocn. of 3-ethyl-3-pentanol in CCl_4 ,

- 3207; 1,4-dioxane with various org. hydroxyl compds., 2799; in ethylene oxide hydrate and deuterate, 3443; in fluoroalcohols from ir data, 296; in ice, calcn. of dipole moment deriv., 310; intermolec., cyclohexanone and 2,6-di-*t*-butylparacresol from ir, 1199; intramolec., normal-coord. anal. for $\text{ClCH}_2\text{CH}_2\text{OH}$, $\text{BrCH}_2\text{CH}_2\text{OH}$, and $\text{CNCH}_2\text{CH}_2\text{OH}$, 152; intramolec. in 2-substd. ethanols, 1149; in liq. HDO, rupture equil., 1655; in liq. H_2O , estn. from vp data, 1088; model calcs. of X-H stretching freq. in ir, 3161; in thiols from ir data, 3594
- Hydrogen cyanide, MO anal. of electronic spect., 653
- Hydrogen iodide, ir in CCl_4 soln., anal. of solvent displacements, reln. to intermolec. pots., 3411
- Hydrogen molecule, calcn. of electron dens. at the nucleus, 2887
- Hydrogen sulfide, rates of decompn. on alumina surface, by ir and vac. microbalance, 3416; use as radical scavenger to deduce mechn. of photol. of alkenes in vac. uv. 2391, 2400
- Hydrolysis, 1-acetyl-5,5-dimethyl-2-thiohydantoin by acid and base, mechn., 3921; acyl chlorides, mechn., 1401; 1-acyl-2-thiohydantoins, mechn., 3767; alk., of 1-acyl-2-thiohydantoins, 3780; alkylchlorosulfates, mechn. and isotope effects, 434; aromatic esters by α -chymotrypsin, 2053; base-catd., of $(\text{CH}_3)_3\text{SiF}$, 3087; *t*-BuCl, role of ion-pair intermeds. from kinetic data, 167; *t*-BuCl in tetrahydrofuran-water mixts., detn. of ΔC^* , 1353; conformnl. requirements for hydrol. of esters, 3405; diethylsulfamoyl chloride, piperidylsulfamoyl chloride, and methylethylsulfamoyl chloride, kinetics, 946; trifluoroacetate esters, sec. isotope effects and mechn., 2175
- o*-Hydroxyacetophenone, flash thermol., mechn., 2513
- Hydroxyachillin, isoln. from *Artemisia frigida*, stereochem. from nmr, 333
- Hydroxy acids, fluorinated, complexes with transn. elements, 939; nmr of trimethylsilyl derivs., 3913
- 6-Hydroxydopamine, synth. from isovanillin, 3075
- Hydroxyl radical, intermed. in photol. of aq. 9,10-anthraquinone-2-sulfonate, 381; rate reacn. with papain in aq. soln., 2833
- 6-Hydroxy-2'-(2-methylpropyl)-3,3'-spirotetrahydro-pyrrolidino-oxindole, molec. and cryst. struct., 2407
- 3-Hydroxy-6-nitro-2,3-diphenylindolenine, struct., 3392
- 5-Hydroxyphenethylamines, starting material for synth. of 6-hydroxydopamine, 3075
- Hyperconjugation and steric effects, investign. by carbonium-ion equil., 3550; possible investign. by carbonium-ion equil., 3534
- Hypersonic velocities, in molten salts, 2704
- Ice, H-bonds in, calcn. of dipole moment deriv., 310; permittivity, temp. variation of, 3046
- Imidazolines, amarines and isoamarines, prepn. and struct., 669
- 17 β -Imidazolyl steroids, synth. and stereochem., 3993
- Imides, synth. from 4-alkylidene-2-phenyl-2-oxazolin-5-ones, 2851
- Imines, *N*-benzylidene- α -methoxybenzylamine, prepn., 669; reacns. of hydrobenzamide, 669
- Iminooxiranes, as intermeds. in oxidn. of semicarbazones, 4066
- Indane, addn. reacns. in $\text{HMO}_3\text{-Ac}_2\text{O}$, 2211
- Indicators, Hammett, activity coeffs., 2254
- Indium(III), complexes with trifluoromethyl- β -diketones, 2622
- Indium(III) complexes, ligand exch. mechn. from nmr data, 3950
- Indole, nitration of *N*-acetyl-2,3-diphenyl-, struct. of prod., 3392; oxidn. with KMnO_4 , struct. of prod., 3397
- Indole dimer, 2,3-diphenyl-*N,N'*-, struct., 3397
- Indolenine, rearr. of 3-hydroxy-6-nitro-2,3-diphenyl-, 3392
- Indole-pyridine alkaloids, of *Nauclea diderrichii*, 1486
- Indole rearrangement, *N,N'*-dimer, 3397
- Indole thioethers, from reacn. of thiols with epinochrome, 3360
- Indoline rearrangement, mechn., 2475
- Indol-2(3*H*)-one (oxindole), *N*- and *C*-alkyln., 18
- Indol-2(3*H*)-ones, 1-benzyl-, 3-benzyl-, and 3,3-dibenzyl-, alkyln., 18
- Infrared intensities, calcn. of X-H stretching vibrn., influence of H-bonding, 3161
- Insertion, reacn. of SnCl_2 with $(\pi\text{-C}_5\text{H}_5)_2\text{Fe}(\text{CO})_3\text{-P}(\text{OC}_6\text{H}_5)_3$, kinetics, 972
- Intermolecular potential, Ar + Ar, from crossed-beam expts., 892; HI in CCl_4 soln. from ir anal., 3411
- Internal rotation, in bromoalkanes from dielec. relaxn. data, 2031
- Iodate, cryst. struct. of KIO_3 , HIO_3 , 1134
- Iodine, radioactive, hot-atom chem. of $\text{IMn}(\text{CO})_5$, 961; soly. in mixed org. solvents, applicn. of soly.-parameter theory, 834
- Iodine trifluoroacetate, addn. to unsatd. carbohydrates, 507
- 3-Iodomethyl glycals, synth., 2919
- syn*-7-Iodonorbornene, prepn., and photochem. isomerizn. to *anti* form., 291
- Ion exchange, $\text{Ti}_3(\text{V}_3\text{O}_9) \cdot n\text{H}_2\text{O}$ for sepn. of alk. earth cations, 2071
- Ionic association, of electrolytes in CF_3COOH from conduct. data, 3789; hydrrn. of NO_2^- , NO_3^- in gas phase, kinetics, 2230; in $\text{NaNO}_3/\text{D}_2\text{O}$ solns. from spect. data and phys. props., 2951
- Ionization, pseudobases of *N*-methyl diazanaphthalene cations, 917
- Ionization constants, of 1-acyl-2-thiohydantoins, 3780
- Ionization potentials, allylic hydrocarbons, 3973; Cl_2CO and Cl_2CS , 737
- Ion pairs, dissocn. of thioketyl anions from esr, 1390; intermeds. in solvol. reacns. from kinetic data, 167
- Ions, conducn. in solids, theory, 574
- Iridium(I) complexes, oxidative addn. of benzenethiols, kinetics, 1868
- Iron(I), insertn. reacn. of SnCl_2 with $(\pi\text{-C}_5\text{H}_5)_2\text{Fe}(\text{CO})_3\text{-P}(\text{OC}_6\text{H}_5)_3$, kinetics, 972
- Iron(II), amide complexes, Mössbauer and ir spect., mag. suscept., 201; thioamide complexes, Mössbauer and ir spect., mag. suscept., 211
- Iron(III), equil. const. for 2,3-dihydroxypyridine complex, 1649; monoacetato-, kinetics of formn. in aq. soln., 194
- Iron carbonyls, reacn. with fluorocarbon-bridged ligands, 2182
- Iron(III) oxide, adsorpn. of Co^{3+} from aq. soln. by Fe_3O_4 , 1642
- Ir spectrum (see also Raman spectrum, Vibrational spectrum), adducts of AlCl_3 or AlBr_3 and $(\text{CH}_3)_2\text{SO}$ or $(\text{CD}_3)_2\text{SO}$, 1157; bis-pyridine and *o*-phenanthroline complexes of mixed halogenosilanes, 2484; $(\text{CH}_3)_2\text{AsI}$, vibr.

- assignments and normal coord. anal., 2691; 2-chloro-, 2-bromo-, and 2-cyanoethanol, normal-coordinate anal., 152; 3-chloro-1,2,5-thiadiazole, 627; complexes of Me_2SnCl_2 and Ph_2SnCl_2 , 3212; the complexes $\text{IrHX}(\text{CO})$ ($\text{SC}_6\text{H}_4\text{Y})(\text{Ph}_3\text{P})_2$ where Y is a ring substit., 1868; complexes of pyridine thiols with metal ions, 3488; correction, of dibenzo[*a,e*]cyclooctatetraene, 2364; correction, of 7-methylenedibenzo[*a,e*]cycloheptatriene, 2364; $\text{Cu}(\text{II})$ -ethylenediamine complexes, vibr. assign. by isotopic substn. methods, 3866; dioxygen complexes with Ni atoms in Ar matrix, 3746; ethylene oxide hydrate and deuterate, H-bonds in struct., 3443; far, origin of, in polar liqs., 2610; $\text{Fe}(\text{II})$ -amide complexes, 201; $\text{Fe}(\text{II})$ -thioamide complexes, 211; fluoride amines of bivalent metals, 567; gallium(III)-trisfluorosulfate, 452; H-bond complexes between cyclohexanone and 2,6-di-*t*-butyl-paracresol, 1199; HI in CCl_4 , anal. of solvent displacements, reln. to intermolec. pots., 3411; H_2S (and D_2S) ads. on Al_2O_3 and $\text{MoS}_2/\text{Al}_2\text{O}_3$, abs. int. of ν_2 vibrn., 3416; ice, comparison with calcd. dipole moment deriv., 310; 3-ketoglutarates of various metal ions, 826; KHCO_4 , $\text{K}_2\text{C}_2\text{O}_6$, HCO_4^- , $\text{C}_2\text{O}_4^{2-}$, 1472; liq. HDO species, 1655; liq. and solid SiH_4 and SiD_4 - SiH_4 mixts. 35; matrix isolated $\text{Pd}(\text{N}_2)_2$ and isotopes, 2385; matrix, $\text{Pd}(\text{CO})_n$, vibr. anal. and molec. struct., 3587; Me titanium halides, 747; $\text{Mn}(\text{NO}_3)_2$ and complexes, 3326; NaNO_3 soln. in D_2O , 2951; $\text{Ni}(\text{II})$ and $\text{Co}(\text{II})$ complexes with *N*-allyl urea and *N*-allyl thiourea, 2603; OCS in various solvents, 217; OH stretching freq. in fluoroalcohols, H-bonds and assocn. of alcohol, 296; oriented polycrystals of org. halogen compds., polarizn. effects on spect., 3255; *cis*-8-oxabicyclo[4.3.0]nonan-3-ols, 3805; $\text{Pt}(\text{II})$ complex salts and olefin adducts, vibr. assignments, 1596; $\text{Pt}(\text{II})$ and $\text{Pd}(\text{II})$ hydroxy complexes, 3694; solid CH_4 and CD_4 in phases I and II, 3521; solvent effects on tautomerism of subst. 5,5-pentamethylene-2-thiohydantoin, 2423; strontium formate single cryst., 1453; trimethylene oxide and deuterated derivs., anal. of vibr. progressions, 2761
- (\pm)-Ishwarane, synth., 3455
- Isobutene, gas, reacn. with solid *p*-phenylphenol, 2882
- 10*H*-Isoindolo[2,3-*c*]benzazepines, synth. of "Schöpf's base VI" and its 4-methoxy deriv., 2022
- Isolysergic acid dimethylamide, conformnl. anal. by nmr, 3876
- Isomerization, acid-catald., of adducts of azodicarbonyl compds. and cyc. dienes, 1568; of addcs. of azodibenzoyl and cyc. 1,3-dienes, 3315; addcs. of azodicarbonyl compds. and cyclopentadiene, 371; *n*- C_3H_7 radical, kinetics, 3738; halogenobenzenesulfonic acids, in conc. H_2SO_4 , 1574
- Isoquinoline alkaloids, molec. rearr. of canconine, 3900; struct. of canconine, 853; struct. of dehydrocanconine-A and -B, 862
- Isothermal compressibility, calcn. for Ar, Kr, and O_2 , 3135
- Isothiazolium salts, reacn. with S, 2568
- Isothiocyanate, tetrameric $\text{N}_4\text{P}_4(\text{NCS})_8$, cryst. and molec. struct., 1315
- Isotope effects, D, in hydrol. of 1-acetyl-5,5-dimethyl-2-thiohydantoin, 3921; D, in oxidn. of MeOH by $\text{Mn}(\text{III})$ complex, 3432; D, in photooxidn. of alkenes, 4034; α -D on solvol. of hindered benzyl chlorides, 3965; in hydrol. of benzyl trifluoroacetate, 1886; kinetic, in redn. of cyc. ketones by NaBH_4 , 388; in radiol. of H_2O - D_2O mixts., 83; sec.-D in Menshutkin reacn., 982, 986; solvent, on solvol. of alkylchlorosulfate, 434
- Isotope exchange, H_2 - D_2 , theory of kinetics, 897; H_2 - H_2O on $\text{Pt-Al}_2\text{O}_3$, 1900
- Isotopic scrambling, in solvol. of 1- ^{14}C -2-phenylethyl tosylate, 1371; from treatment of 1- ^{14}C -1-chlorobutane with AlCl_3 , mechm., 3179
- Isoxazoles, photochem. isomerizn. to oxazoles, 3730
- cis*-Jasmone, dihydrojasmone, synth., 2718
- Juvenile hormone, mimics in Douglas-fir wood, 2380
- K**etals, of *cis*-5-cyclooctene-1,2-dione, prepn., 1548
- Ketene, triplet-state energy level from kinetic data, 2313
- γ -Keto esters, from hydrl. of propargylic esters, 1105
- 3-Ketoglutarates, of various trans. metals, Mg, and Na, prepn. and props., 826
- Ketones, bromination, kinetics and mechm., 3233; cyc. α,β -unsatd., electroredn., potl. correln. with triplet energy, 4050; enolizn., effects of Br substituents on rates, 3242; hydrl. in mixed solvent, 1992; semicarbazones of, oxidn., 3248; α,β -unsatd., mass spect. fragmentn. patterns and mechms., 871
- Ketys, conformn. from esr data, 1427
- Khusinol, struct. from nmr, 3272
- Kinetic isotope effect, D and N in 1,3-elimn., 2332; in redn. of cyc. ketones by NaBH_4 , 388
- Kinetics, modified phase space theory, applicn. to energy distribn. in prods. of $\text{Cl} + \text{HI}$, 633; theory, concept of min.-state dens. applied to transn.-state theory, 3386
- β -Lactams, synth. of 3-substd. by metalln., 3196
- Lambertianic acid, synth. from podocarpic acid, 3749
- Lanthanide oxides, adsorp. of H_2 and O_2 , 490
- Lead(II), hydrated oxynitrates and oxide, prepn., 184; kinetics and equil. of complexes with diethylenetriaminepentaacetic acid by polarog. method, 3821
- Lead tetraacetate, oxidn. of aldehyde semicarbazone, mechm., 4066
- Levopimaric acid, pyrol. at 400–500 °C, mechm., 2224
- Lewis acid-base reactions, rate studies by esr line broadening, 2079
- Ligand exchange kinetics, complexes of $\text{Pb}(\text{II})$ with diethylenetriaminepentaacetic acid, 3821
- Liquids, polar, absorpn. of microwave and far ir, 2610
- Liquid-solid equilibria, mixts. of formates of alk. metals and alk. earths, 1972
- 3-Lithio-2-azetidinones, alkyln., hydroxyalkyln. and iodination, 3196
- Lithio carbanions, of *N*-substd. β -lactams, 3196
- 2-Lithio-1,3-dithiane, reacns. with steroidal C-17 spiroepoxides, 1414
- Lithium aluminum hydride-aluminum chloride mixtures, for reductive cleavage of 2-aryloxytetrahydrofurans, 3639
- Lithium chlorate, thermo. props. in H_2O and dioxane- H_2O mixts., 1627
- Luminescence, colchicine in soln., nature of excited states, 1959; quenching, mechm. of photol. of $\text{Cr}(\text{III})$ complexes, 887
- Lycopodine, pelletierine as an obligatory precursor in biosynth., 2591
- Lysergic acid dimethylamide, conformnl. anal. by nmr, 3876
- M**acromolecules, conformn. of cellulose, 792
- Magnesia, calorimetric ΔH_{fus} of SO_2 at 423 °K, crystalline struct. by electron microscopy, 2817

- Magnesium, formn. of 1,6-diketones from C_2H_3HgCl and fatty acids, 2786
- Magnesium metavanadate, cryst. and molec. struct. from X-ray and esr spect., 3619
- Magnetic susceptibility, Cs_2CoF_6 and Rb_2CoF_6 , 2447; $Fe(II)$ -amide complexes, 201; ions with 2T_2 ground states, calcn. and comparison with expt., 1468; β -MnSe, 4059; oxyhalide ions, 2155
- Manganese, cyclopentadienyl-, synth. and ir of thiocarbonyl derivs., 598
- Manganese(III), potassium *trans*-1,2-diaminocyclohexanetetraacetato-, compn. and mechn. of reacn. with MeOH, 3432; potassium *trans*-1,2-diaminocyclohexanetetraacetato-, oxidn. of substd. phenols, mechn., 3437; trinitrato-2,2'-bipyridyl complex, cryst. and molec. struct., 3332
- Manganese dioxide, adsorpn. of Co^{2+} from aq. soln. by MnO_2 , 1642
- Manganese(III) fluoride, reacn. with N_2O_5 , 3326
- Manganese(III) nitrate, prepn. and complexes of, props., 3326
- Manganese pentacarbonyl halides, hot-atom chem., 961
- Manganese selenide, β -, prepn. and mag. suscept., 4059
- Mannann, cryst. struct., 2030
- Mass spectrometry, retro Diels-Alder process on fragmentn. of dihydropyran esters, 1539; thermochem. of $C_3H_3^+$, $C_3H_2^+$, $C_4H_2^+$, 3973
- Mass spectrum, concentrine and its derivs., 853; cycloalkane-1,1-dicarboxylates, 1535; dehydroconcentrine-A and -B, 862; β -keto esters, 2707; *O*-Me oximes of α,β -unsatd. ketones, 2776; Me-substd. cyclohexanone *O*-Me oxime ethers, 2776; *Nuphar* alkaloids, 1831, 1968; substd. styryl ketones, 871; 1,2,3,4-tetra(trifluoromethyl)-5-thiobicyclo[2.1.0]pentene-2, 2721; tropolones and Me ethers, 821
- Master equation, for chem. kinetics, novel solution, 3104
- Meisenheimer adduct, 1,3,5-trinitrobenzene and aniline, 129
- Meisenheimer (sigma) complexes, 1,3,5-trinitrobenzene with OH^- , equil. const., 1729
- Menschutkin reaction, sec.-D isotope effects in reacn. between MeI and pyridine, 982, 986
- Mercury, $Hg(6^3P_0)$ formn. in various $Hg(6^3P_1)$ -quencher systems, 176; $Hg(6^3P_0)$ sensitized decompn. of alkanes and H_2 , formn. of HgH , 595; quenching [$6^3P_1 \rightarrow 6^3P_0$, 6^1S_0] by various molecs., 176; soly. in aq. NaCl soln., 3124
- Mercury(I), photooxidn. by Ce(IV), 2413
- Mercury(II), cryst. struct. $Hg(SCN)_2$, 977
- Mercury hydride, formn. in the $Hg(6^3P_0)$ photosensd. decompn. of alkanes and H_2 , 595
- Mesoionic compounds, synth. from 1-azaphenothiazine, 1026
- Metal complexes, errors in detn. of successive formn. const., 641
- Metalloporphyrins, tricarbonylchromium π -complexes, 720
- Metal-sulfur bond, complexes of pyridine thiols with metal ions, prepn. and spect. props., 3488
- Methane, calcn. of mobility of e^- in liq., 3379; decompn. in triboelec. disch., mechn., 3813; and - d_4 , ir of crystals. I and II, struct. of phase, 3521
- Methanol, and deuterated derivs., mechn. of oxidn. by $Mn(III)$ complex, 3432; effect of anions on kinetics of anodic oxidn., 1891; liq.-vap. equil. in binary systems with acetone and cyclo- C_6H_{12} , and in ternary system with both, 479; phys. props. of binary systems with cyclo- C_6H_{12} , $(CH_3)_2CO$, and of ternary system with both, 1109
- 1-Methoxy-1,4-dihydro-1,4-ethenoanthracene, photol., mechn., 395
- 2-Methoxyethanol, microwave spect., dipole moment, conformns., 1149
- Methylamine, ΔH_{sub} on SiO_2 gel and $SiO_2-Al_2O_3$ at 266 °K, 1666
- 7-Methylenedibenzo[*a,e*]cycloheptatriene, nmr and correction to ir, 2364
- 2,3-C-Methylene glycopyranosides, synth., 2909
- Methylethylsulfamoyl chloride, ΔC_p° for hydrol., 946
- Methyl ethyl sulfide, photol. of vap., 1734
- Methylfluoropyridines, nmr, coupling const. of several isomers, 2344
- 6-*O*-(4-*O*-Methyl- β -D-glucopyranosyl)-D-galactose, synth., 1424
- Methyl isocyanide, unimolec. behavior in therm. isomerizn., 3251
- 1-Methyl-2-methylthio-5,5-pentamethylene-2-imidazolin-4-one, synth., tautomerism from spect. data, 2423
- 1-Methyl-2-methylthio-5,5-pentamethylene-2-imidazolin-4-thione, synth., tautomerism from spect. data, 2423
- N*-Methylnaphthyridinium cations, pseudobase formn. by, 917
- 1-Methyl-4-nitromethylnaphthalene, mechn. of formn. from acetyl nitrate and 1,4-dimethylnaphthalene, 3988
- 2-(3'-Methyl-4'-nitrophenoxy)-1,3-diisopropylbenzene, cryst. struct., 2963
- N*-Methyl-4-(2'-octoxy)pyridinium iodide, optically active, reacn. with Ag_2O , 2511
- 3(5)-Methyl-4-phenyltetrahydropyridines, redn., 2149
- 1-Methylphthalazinium cation, pseudobase formn. by, 917
- 2-Methylpropane, radiol., effect of elec. field, 1617
- N*-Methylpyridinium cation, pseudobase formn. by, 2511
- 1-Methylquinoxalinium cation, pseudobase formn. by, 917
- Methyl radical, absn. from *neo*- C_5H_{12} , kinetics, 1123; CD_3 exch. reacns. with $(CH_3)_3Sb$, 966; kinetics of self-combn. and with *neo*- C_5H_{11} , 1123
- Methyl sulfide, mechn. of photol. in gas phase, 844
- Methylthyl radicals, addn. to olefins, 1734; reacn. with *neo*- C_5H_{12} and CH_3SCH_3 , 844
- Methyl titanium halides, ir and nmr, 747; pyrol., 755
- Microwave spectrum, in detn. of dielec. const. of substd. acetophenone and naphthalenes, 1047; gaseous 1,3-dioxane, 1690; $MeOCH_2CH_2OH$, 1149; origin of, in polar liqs., 2610
- Mobility, electrons in liq. CH_4 , calcn., 3379
- MO calculation, conformns. of ethylenediamine in LCAO-EHMO approxn., 1005; cusp-satisfying orbitals, applicn. to 2-electron systems, 2887; electronic spect. CO_2 , HCN, 653; electronic spect. H_2CO , 646; Hückel, ^{13}C chem. shifts and electron dens. in carbohydrates, 814; INDO, of coupling const. in aniline derivs., 2575; INDO, on long-range coupling and conformn. in substd. toluenes, 1852; INDO-FPT, of long-range coupling const., 2035; INDO, of N,H coupling const., 2989; INDO, of vicinal $^{13}C,H$ coupling const., 2710; long-range couplings in enyne compds., 1863; mag. props. of 2T_2 ions, comparison with exptl., 1468; nuclear-spin coupling in 2-furandaldoximes, INDO and CNDO, 274; orbital struct. of Cl_2CO and Cl_2CS , 737; perinaphthenyl radical, 139
- Molecular beams, Ar + Ar crossed, derivn. of intermolec. potl., 892
- Molecular distribution functions in dense fluids, 3135
- Molecular weights, polymers, from sedimentn. and visc. data, 305

- Molten salts, elec. conduct. of ferric vanadate, 2877; elec. conduct. and visc. of sodium vanadate, 2871; elec. conduct. of V_2O_5 , 2865; electrode pots. of Ru(III)/Ru(0) and As(III)/As(0) in LiCl-KCl, 3911; electronic spect. of Co(II) in, 2946; hypersonic velocities in, 2704; partial phase diagram of $CaCl_2$ in molten $CaCl_2$, 839; theory of ΔS_{mix} , 1345
- Monobromogermene, improved prepn., 1607
- Monochloroaluminum dihydride, cleavage of subst. 2-alkoxytetrahydrofurans, 1502
- Monoenergetic electron impact, thermochem. of allylic rads. and ions, 3973
- Monoterpenoid, constits. of *Nauclea diderrichii*, 1496
- Mordenite, esr of C_6H_6 ads. on treated hydrogen mordenite, 2041
- Morpholine, Ni(II) bis(β -ketoenolates) adducts, prepn. and props., 2557
- Mössbauer spectrum, complexes of Me_2SnCl_2 and Ph_2SnCl_2 , 3212; Fe(II)-amide complexes, 201; Fe(II)-thioamide complexes, 211; ^{129}I emission spect. of ^{129}Te -labelled tellurium halides, 3037; interpretn. of ^{125}Te spect. of tellurium halides, 3037; ^{129}I spect. of *trans*-Te(ethylene-thiourea) $_2$, $^{129}I_2$, 3677; ^{119}Sn of dialkyltin(IV)-bisfluoro-sulfates, -bistrifluoromethanesulfonates and -bisdifluorophosphates, 1843; ^{125}Te spect. of thiourea complexes of Te(II) and Te(IV), 3677
- L (+)-Muscarine, synth., 3322
- 1-Naphthyl-2-phenylethylenes, synth., 528
- Nematic solvents, use in struct. studies by nmr, 3566
- Neopentane, $Hg(^3P_1)$ photosensd. decompn., mechm., 1115, 1129; radiol. kinetics, 2729
- Neopentyl radical, decompn., kinetics, 1123; self-combn. and with Me, 1123
- Neopentyl xanthates, mechm. of pyrol., 3288
- Neothioinupharidine sulfoxide, an alkaloid of *Nuphar luteum*, 1968
- Neptunium, ^{237}Np , formn. of ^{134}Cs isomers in nuclear reacn. with 20–85 MeV 1H , 1877
- Nickel, struct. of dioxygen complexes with Ni atoms, 3746
- Nickel(II), bis(dithiocarbamate)-, displacement of Ni(II) by Cu(II), kinetics, 3384; bis(β -ketoenolates), adducts with N-atom donors, prepn. and props., 2557; complexes with pyridines, nmr, 2626; ligand-substn. kinetics, 402; phenanthroline complex, kinetics of anation with EtOH, 3861; pyridine carboxylates and pyridine-3-sulfonic acid complexes, struct., 1307
- Nickel dioximate, mechm. of nucleation in soln., 2859
- Nickel(II) complexes, *N*-allyl urea and *N*-allyl thiourea, spect., 2603
- Niobium(V), complexes with 1,2,5-triphenylphosphole derivs., 1008
- Niobium(IV) bromide, therm. dissocn. equil., 1604
- Niobium(V) bromide, from therm. dissocn. of $NbBr_5$, 1604
- Nitrate esters, circ. dichroism, symmetry rule, 1719; complexes with tetramethyl-*p*-phenylenediamine, struct., 3340
- Nitrate ion, kinetics of hydrn. in gas phase, 2230
- Nitration, 1,4-dimethylnaphthalene, 3988; indane in Ac_2O , 2211; 2-isopropylimidazole with nitronium tetrafluoroborate, 3472; of polycyc. aromatic compds., addn. reacns., 3367; of 1-trimethylsilyl-2-isopropylimidazole, 3472
- N*-Nitrenes, evidence for, in decompn. of *N*-azido dibenzylamine, 1778
- Nitrenium ions, evidence against discrete species, 1167
- Nitriles, from dehydrn. of amides by phosphonitric chloride, 3857
- Nitrite ion, kinetics of hydrn. in gas phase, 2230
- Nitrogen, collisional deactivn. of $N_2(^3\Sigma_g^-)$ by diat. molecs., 1; deactivn. of $O_2(^4\Sigma_g^-)$, kinetics, 2516; molec., in Os(II) complexes, 3093; prepn. of complexes $Pd(N_2)_3$ by matrix isoln., spect. studies, 2385
- Nitrogen atom, mechm. of formn. of excited CN in active N, 2527; reacn. with N_2 , 1437; reacn. with perfluoroolefins, kinetics, 346
- Nitro glycosides, prepn. of, epimerizn. in, sepn. of benzylidene derivs., 1216
- Nitro indanes, from indane in HNO_3-Ac_2O , 2211
- Nitromethane cyclization, of sugar dialdehydes, epimer distribn., 1216
- N*-Nitrosamine(s), photoaddn. to conj. cyc. dienes, 1065; photoaddn., photoelimn., photoreducns., 1044
- Nitro sugars, methyl 4,6-*O*-benzylidene-2,3-dideoxy-3-C-nitromethyl- α -D-ribo-hexopyranoside, prepn., 1780; in synth. of oximino and oxo derivs., 1292
- Nitrous oxide, oxidn. of 2-propanol initiated by γ -rays, 1751; radiol. mechm., 1557; reacn. with $O(^1D_2)$, kinetics, 1838
- Nmr (general and theory), basicity of ethers by, 445; coupling const. dependence on torsion angle, 773; hindered rotn. in carbamates, 1594; INDOR spectry., 504; lanthanide-induced shifts, automatic assignment of signals, 2905; lanthanide shift reagents, binding constns. and stoichiometry, 2119; lanthanide shift reagents, convers. of nonlin. to lin. plots, 2725; long-range coupling constns. and conformn., 274; long-range spin-spin coupling in 1-penten-3-yne, 1863; pulsed, nucl. relaxn. times in vindoline, 497; rotn. barriers in diphenyl ethers, 353; several methylfluoropyridines, coupling constns., 2344; shift-reagent spectra, automatic assignment of signals, 2905; solvent- and Eu(DPM) $_3$ -induced chem. shifts in detn. of positi. isom., 104; solvent- and Eu(DPM) $_3$ -induced shifts, positi. isom. in uracil and pyrimidine derivs., 880; solvent and Eu(fod) $_3$ studies, struct. of pyrimidones and pyrimidines, 1253
- Nmr (1H), acetylglucine complexes with Cd, Zn, and Pb, 1036; 2-amino-4-*t*-butylcyclohexanols and derivs., 3998; β -amyrin lanthanide-induced shifts, convers. of nonlin. to lin. plots, 2725; anal. of benzylidene sugars, 1216; 6-aryl[1,2,4]triazolo[4,3-*d*]tetrazoles, 1786; benzene-induced solvent shifts in polycyc. compds., 1944; benzylidenemalononitrile-trialkylphosphine adducts, struct., 1713; bicyclo[4.2.0]octane, coupling constns. for ring-fusion hydrogens, 3744; boron trihalides-acetonitrile adduct, exch. with CH_3CN , 1262; cancrine and derivs., 853; chem. shifts of aromatic protons subject to unusual deshielding influences, 3900; complexes $IrHX(CO)(SC_6H_4Y)(Ph_3P)_2$ where Y is a ring substit., 1868; conformnl. anal. of altersolanol B, 122; conformnl. anal. of lysergic and isolysergic acid dimethylamides, 3876; conformnl. preference of formyl grp., 1965; dialkylamino-sulfur trifluoride, 2428; dibenzo[a,c]cyclooctatetraene and 7-methylenedibenzo[a,c]cycloheptatriene, 2364; di-hedral-angle estn. (DAERM), in furanones, 1912; 2,6-dinitro 4-X-subst. anisoles, 3558; episulfides, 3930; equil. in cyclohexenyl cations, 3550; equil. in cyclopentenyl cations, 3534; ethylene sulfite, coupling constns. and configns., 2370; 4-fluoromethyl-1,3-dioxanes, 412,

- 423; folic acid, intermolec. assocn. in aq. soln., 2357; halogenobenzene(d)sulfonic acids, 1574; hydroxyachillin, stereochem. by, 333; INDO-MO calcs. for pyridine ligands in Ni(II) complexes, 2626; isotropic shifts in pyridine-Ni(II) complexes, 2626; lanthanide shift reagents, binding consts. and stoichiometry, 2119; lanthanide shift reagents, detectn. of diastereotopic grps. in steroidal diastereoisomers, 2788; lanthanide shift reagents, effect on ^1H and ^{13}C resonances, 2139; long-range coupling Me protons in PhCH_3 , *p*-fluorotoluene, and the xylenes, conformnl. dependence, 1852; long-range shielding effects of cyano grp., 2351; long-range spin-spin coupling in 1-penten-3-yne, 1863; low-temp., of cyclohexanecarboxaldehyde, 1965; Meisenheimer complexes, struct., 3558; methyl titanium halides, 747; and ^{14}N , N,H coupling consts. over two and three bonds, 2989; norbornadiene in nematic solvent, 3566; *Ormosia* alkaloids, 1639; *cis*-8-oxabicyclo[4.3.0]nonan-3-ols, 3805; 2-oxo-1,3,2-dioxaphosphorinane, 2092; phenylacetylenes, π contrbs. to long-range coupling consts., 2035; Pt(II) and Pd(II) hydroxy complexes, 3694; shift reag., Eu(fod) $_3$ with bicyc. ethers, 3744; stereochem. of redn. of 3-benzyl camphors, 1376; steroidal diastereoisomers, signal resoln. with Eu(DPM) $_3$, 2788; struct. of clathrate hydrate of HPF_6 , 3515; study of hydroly. of $(\text{CH}_3)_3\text{SiF}$, 3087; study of rearr. of cyclohexenyl cations, 2939; styryl anions, rotl. barriers, 1246; *o*-substd. acetophenones, hindered rotn. in, 2470; trimethylene sulfite and derivs., conformns., 521; trimethylsilyl ethers and esters, 3913; trimethyltin carbamates, rotl. barriers, 1386; use of methine signal dimensions in conforml. anal., 3998
- Nmr (^{13}C), acetoxime, solvent effects on chem. shifts, 1956; calcd. vicinal ^{13}C ,H coupling consts. in C_3H_8 , 2710; ^{13}C - ^1H coupling, vicinal and geminal, orientnl. dependence, 3667; chem. shifts, reln. to electron dens. in carbohydrates, 814; chem. shifts of substd. bicyclo[2.2.1]heptanes, 2146; conformns. of steroids, 3993; ^{13}C satellites in ^1H nmr of 2,6-dinitro 4-X-subst. anisoles, 3558; ^{13}C satellites in ^1H nmr of Meisenheimer complexes, 3558; ^{13}C resonances and shift-reagent effects, 2139; ^{13}C shieldings of allyl alcohols, geom. dependence of ^{13}C shieldings, 1361; ^{13}C shieldings in α,β -unsatd. acids and esters, an additive reln. for olefinic shieldings, 601; ^{13}C to vicinal ^1H coupling, 773; heparin, 2437; lanthanide shift reagents, ^{13}C resonances of 2,2-dimethyl-1-propanol, 2139; lanthanide shift reagents, effect on ^1H and ^{13}C resonances, 2139; struct. of 1-phenyl-4-anilinourazole, 2661; struct. of a tricyc. tetraaza dimer, 612; tropolone, assignments, 1975
- Nmr (other nuclei), D, D chem. shifts, 1,2,5,6-di-*O*-isopropylidene- α -D-allofuranose-3-d, 504; ^{19}F , BF_3 -tetramethylurea complex, 713; ^{19}F , ClF_3 , 3409; ^{19}F , dialkylaminosulfur trifluoride, 2428; ^{19}F , 4-fluoromethyl-1,3-dioxanes, 412, 423; ^{19}F , In(III) complexes, ligand exch. kinetics, 3950; ^{19}F , struct. of clathrate hydrate of HPF_6 , 3515; ^{39}K , chem. shifts in aq. electrolytes, 3926; ^{14}N and ^1H , N,H coupling consts. over 2 and 3 bonds, 2989; ^{15}N , aniline- ^{15}N and derivs., 2575; ^{15}N , long-range coupling consts. in aniline- ^{15}N , 2575; ^{23}Na , ion solvn. from quadrupolar broadening, 3935; ^{31}P , 2-oxo-1,3,2-dioxaphosphorinane, 2092; ^{31}P , and conformnl. anal. of cyc. phosphate esters, 2102; ^{31}P , phosphorinanes, conformnl. anal., 2111; ^{31}P , phosphotriesters, conformnl. anal., 2111; ^{31}P , phosphonates, 1078
- Nqr, coupling const. of BiCl_3 , 2586
- Nonaqueous solvents, ionic assocn. and conduct. of electrolytes in CF_3COOH , 3789; for subst. reacns. of Ni(II) complexes, 402
- Non-steady-state equations, math. soln. for enzyme reacns., 1440
- Norbornadiene(s), adducts with phenyl azide and cyclopentadienones, 3186; molec. struct. from nmr studies in nematic solvents, 3566
- Norbornene(s), addn. of ICl , 291; solvol. at 250 $^\circ\text{C}$, struct. of prod., 3350
- Norborneols, synth. of deuterated, 618
- Norbornyl-*p*-bromobenzenesulfonates, solvol., kinetic isotope effect, 618
- Nortricyclanes, halogenated, acid-catd. opening, 2163; solvol. at 250 $^\circ\text{C}$, struct. of prod., 3350
- Nqr (Nqr follows Nmr)
- Nucleation, from solns. of nickel dioximates, mechm., 2859
- Nucleotides, oligothymidylates, synth. on succinylated polystyrene, 1211
- Nupharolutine, an alkaloid of *Nuphar luteum*, isoln. and struct., 1831
- (+)-Occidentalol, synth. and struct., 336, 340
- (\pm)-Ochrobirine, synth., 3028; total synth., 1819
- Olefins, addn. of sulfonyl chlorides, mechm., 2457, 2465; perfluoro-, reacn. with N atoms, kinetics, 346
- dl*-Occidol, synth. via quinodimethide, 1098
- Oligonucleotides, synth. without amino-grp. protection on adenine or guanine, 769; synth., 2-phenylmercaptoethanol as phosphate-protecting grp., 456
- Oligoribonucleotides, β,β,β -trichloroethyl derivs., 2'-*O*-tetrahydropyranyl deriv., synth., 1283
- Optical rotation, Brewster's rules, 766
- Ormocastrine, struct., 1639
- Ormosanine, and 16-epiormosanine, prepn. by hydrogn. of ormocastrine, 1639
- Ortho esters, electrochem. synth. from vicinal diketals, 3424
- Osmium(II), ammine complexes, prepn., 3093
- cis*-8-Oxabicyclo[4.3.0]nonan-3-ols, synth., struct. from spect. data, 3805
- 1,3,4-Oxadiazines, 5,6-dihydro-, prepn. by acid catd. isomerizn. of Diels-Alder adducts, 1568; 5,6-dihydro-, synth. by isomerizn. of Diels-Alder addcs., 371
- 1,2,5-Oxadiazole, anal. of uv spect., 2088
- 1,3,4-Oxadiazole-2-thione, prepn. by decarboxyln. of 1,3,4-oxadiazole-2-thione-5-carboxylic acid, 3079
- Oxadiazolinones, thermol., mechm., 2326
- Δ^3 -1,3,4-Oxadiazolin-2-ones, prepn. from semicarbazones of ketones, 3248
- Oxalato(*S* - butane - 1,3 - diamine)cobalt(III), configns. of pseudo-enantiomers from circ. dichroism, 3569
- Oxatrimethylene, intermed. in therm. racemizn. of oxiranes, 428
- 1,3-Oxazin-6-thiones, novel synth., 584
- Oxazoles, photochem. isomerizn. to isoxazoles, 3730
- Oxazole-2-thione, prepn. by condensn. of glycolic aldehyde and thiocyanic acid, 3082
- Oxazolines, prepn. 2236
- Oxidation, of aldehyde semicarbazone, mechm., 4066; alkenes, by singlet oxygen or triphenylphosphite ozonide, isotope effects in, 4034; anodic, of Al, transient response, 3259; anodic, effect of anions on kinetics for MeOH, 1891; cyclopropylcarbinols with MnO_2 , 2928; dipyrindine

- chromium trioxide reagent, 2712; by Fremy's salt of 5-hydroxyphenethylamines, 3075; ketones by Ce(IV), 2047; of ketone semicarbazones, 3248; MeOH and D derivs. by Mn(III) complex, mechm., 3432; org. compds. by sodium ruthenate, 3741; 2-oxazolin-5-ones by O₂, 2851; α -pinene by chromyl chloride, prods. and mechm., 4022; primary alcohols with CrO₃-graphite, 3058; 2-propanol by N₂O initiated by γ -rays, 1751; 2-propanol by RuO₄, kinetics and mechm., 2000; substd. phenols by Mn(III) complex, mechm., 3437; tetrahydrofuran by RuO₄, kinetics and mechm., 3129; thiones by peracetate, 2568
- Oxidation potentials, amines and carbonyl compds., triplet energies from, 4052
- Oxindole alkaloid, molec. and cryst. struct., 2407
- Oxiranes, racemizn. mechm., via oxatrimethylene, 428
- μ -Oxo-bis[oxotrichloro(*O*-perrhenylchloride)rhenium(VI)], cryst. struct., 3607
- 4-Oxo-3-butenyl systems, ring closure, 2919
- 3-Oxo-glutarate, decarboxyln., catd. by trans. metal ions, 3573
- 3-Oxo-glutarate ions, Cu(II)-catd. decompn., 1461
- 3-Oxo-1,2,3,7,8,9,10,10a-octahydrocyclohepta[de]naphthalene, nitrn., 3367
- Oxotetrachloroaquorhenium(VI), prepn., props., and cryst. struct., 1811
- Oxygen, adsorpn. on lanthanide oxides, 490; deactivn. of O₂ ($b^4\Sigma_g^-$), kinetics, 2516; effect on the elec. conduct. of liq. ferric vanadates, 2877; effect on the elec. conduct. of liq. sodium vanadates, 2871; effect on the elec. conduct. of liq. V₂O₅, 2865; molec. complexes with Ni atom, struct. from Ar-matrix ir, 3746; O₂ ($^1\Sigma_g$) formn. during uv flash photol. of O₃, 2747; O₂ ($^1\Sigma$) as intermed. in photooxidn. of thioketones, 3923; radiol., effect of elec. field, 1617; radiol. of in presence of N₂O, 1557; reacn. with Rh(I) complexes, esr, 590; ($^1\Delta_g$), r^{-1} : in dye-sensd. photooxidn., 932
- Oxygen atom, O(1D_2) reacn. with N₂O, kinetics, 1838; reacn. of O(1D) with H₂O and N₂, kinetics, 2747
- Oxygen molecular ion, collisional deactivn. of O₂ ($b^4\Sigma_g^-$) by O₂, N₂, kinetics, 2516
- Oxyhalide ions, mag. suscept., 2155
- Oxyphosphoranes, as intermed. in ozonol., 2552
- Ozone, reacn. with substd. phenylethylenes, kinetics, 2841; uv flash photol., mechm., 2747
- Ozonide(s), mechm. of decompn. by radioisotope diln., 4029; styrene, kinetics of decompn. by org. phosphites, 2552
- Ozonolysis, acetals, reactive conformns., 3402; of dihydro-pyran for prepn. of 2-alkoxytetrahydrofurans, 1783; mechm. for styrene, 2552; Me 11-dodecenoate, mechm., 4029; reacn. mechm., 2841
- Palladium, and Ag alloys, desorpn. of H₂ from, 1321
- Palladium(0), prepn. of complexes Pd(N₃)₂ by matrix isoln., spect. studies, 2385
- Palladium(II), hydroxy complexes, struct., 3694
- Palladium carbonyls, prepn. and ir of Pd(CO)_n in matrix molec. struct., 3587
- Paniculatin, isoln. from *Murraya paniculata*, 443
- Papain, pulse radiol. in aq. soln., 2833
- Pelletierine, an obligatory precursor of lycopodine in bio-synth., 2591
- Penicillamine, synth. of 1-benzyl-2-carbomethoxy-3,3-dimethyl aziridine, 4061
- Penicillin(s), chlorinol. of anhydro-, formn. of S-free derivs., 2894; prepn. of S-free derivs., 2898; S-free derivs., recyclizn. to azetidinones, oxanhydro-penicillin and azacephem, 2902; synth. approach via transannular route, 2195
- Pentacyanocobaltate(II), cat. of D₂-H₂O exch. by, 3144
- Pentadienyl cations, rearr. and cyclizn. rates, 2806
- Pentafluoropropane-1,1,1-*d*₃, electrochem. synth., 3084
- Pentanedione, emission and vibri. deactivn. in photol., 1338; fluoresc. and phosphoresc. in gas phase, mechm., 1331
- 1-Penten-3-yne, long-range spin-spin couplings by nmr, MO calcs., 1863
- n*-Pentyl radical, kinetics of isomerizn., 3738
- Peptides, of djenkolic acid, synth., 1633; formn. of metal complexes at C-terminal end, 1036; synth., *N*-carboxy-anhydrides in, 299
- Percarbonates, KHCO₃ and K₂C₂O₆, spect. and struct., 1472
- Perfluoroaromatic compounds, new method for detn. of heat of formn., 2935
- Perfluorocycloolefins, reacn. with dimethylarsine, 1421; reacn. with N atoms, kinetics, 346
- Perinaphthenyl radical, esr and struct., 139
- Permittivity of ice, temp. variation, 3046
- Peroxskite structure, fluoride compds., props., 1529
- Peroxyhydrates, of K₂CO₃, spect. and struct., 1472
- Peroxy radicals, abs. rate const. for self-reacn., 2374
- Peroxytrifluoroacetic acid, with TiCl₄ as aromatic halogen. reag., 1233
- Pesticide, photodegradable, 1,1,1-trichloro-2,2-bis(5-chloro-2-methoxyphenyl)ethane, mechm. of photol., 55
- Phase diagram, system NaCl-H₂O-dioxane, 3388
- Phase transitions, effect on elec. conduct. of pure and doped NH₄ClO₄ crystals, 3154
- Phenacetin, synth. of two thio-subst. metabolites, 2025
- Phenalanine anion radical, conformn. from esr, 1523
- Phenanthroline, complex with Ni(II), kinetics of anation, 3861
- 2-Phenethylamine-1,4-benzoquinones, synth. via Fremy's salt oxidn. of 5-hydroxyphenethylamines, 3075
- Phenol, substd., mechm. of oxidn. by Mn(III) complex, 3437
- Phenoxo complexes, of Cu(II), decompn., 2792
- Phenoxy radicals, effect on vinyl acetate polymerizn., by esr, 3304
- γ -Phenylazo- γ -valerolactone, thermol., 1767
- 5-Phenyl-2,3-dihydro-1*H*-2-benzazepin-1-ones, synth., 3886
- p*-Phenylenediamine, tetramethyl-, complexes with nitrate esters, struct., 3340
- Phenylethylene, ring-subst., reacn. with ozone, 2841
- 1-¹⁴C-2-Phenylethyl tosylate, solvol. in presence of N₃⁻, 1371
- 9-Phenylfluorene, reacns. with organosilyl-lithiums, 3761
- 2-Phenyl-1,3-indandiones, intermeds. in the synth. of spiro-benzylisoquinolines, 3028
- 2-Phenylmercaptoethanol, as phosphate-protecting grp. for oligonucleotide synth., 456
- Phenylmethanesulfonic acid, sulfonation kinetics in conc. H₂SO₄, 1591
- 4-Phenyl-4-piperidinols, hydrogenol., 2149
- 1-Phenylpropene, *cis*- and *trans*-, addn. of sulfonyl chloride, mechm., 2457, 2465
- 2-¹⁴C-3-Phenylpropionaldehyde, isotopic scrambling during photol., 593
- 3-Phenylpropyltrimethylammonium ion, 1,3-elimn. from, 2332

- 2-Phenylquinazolin-4(3*H*)-one, from thermol. of subst. triazene, 1775
- Phenylsulfoxyacetic acid, Pt(II) and Cd(II) complexes, metal salts, 3202
- Phosgene, photoelectron spect. and orbital struct., 737
- Phosphate-protecting group, in oligonucleotide synth., 2-phenylmercaptoethanol, 456
- Phosphates, cyc. esters from pentane-2,4-diol, 2102
- Phosphazenes, chlorocyclo-, prepn. and props., 1017
- Phosphine(s), ditertiary, react. with iron carbonyls, 2182; subst., complexes with Cu(II), prepn. and props., 1269
- Phosphites, org., react. with ozonides, mechm., 2552; trialkyl- and triphenyl-, react. with cholesterol, 2264
- Phosphine, complexes of Rh(I) and Rh(III), prepn. and hydrogn. cat., 3714; 1,2,5-triphenyl-, π -complexes with Rh(I) salt, prepn., props., and reactivity, 2442
- Phosphonate, of cholesterol, formn. from phosphites, 2264; dialkyl-2-hydroxy-1,1,1,3,3,3-hexafluoroisopropyl-, react. to phosphate, base catd., kinetics and mechm., 1205
- Phosphonitrile, tetrameric $N_4P_4(NCS)_8$, cryst. and molec. struct., 1315
- Phosphonitrilic chloride, as reag. for dehydrn. of amides, 3857
- Phosphonitrilic halides, react. with *N,N'*-dimethylethylenediamine, 1017
- Phosphonitrilic imidazoles, prepn. and props., 1017
- Phosphonium, alkyltriphenyl-, salts, prepn., 866
- Phosphorescence, and fluorese., 2,3-pentanedione in gas phase, mechm., 1331, 1338
- Phosphorescence excitation, as method to study solvent and heavy-atom effects in $S \rightarrow T$ absorpn. of aromatic ketones, 3601
- Phosphoric acid, poly-, react. with cyclobutanones, mechm., 952
- Photene reaction, β -subst. styrenes with olefins via S_1 state of styrenes, 1984
- Photoaddition, cyc. olefins with aminium radicals, stereochem., 1051; *N*-nitrosamines to conj. cyc. dienes, 1065; *N*-nitrosamines to cyc. olefins, 1051
- Photoamidation, 3,4,6-tri-*O*-acetyl-1,2-dideoxy-*D*-arabino-hex-1-enopyranose, 1192
- Photochemistry, of benzil, 2499; energy levels involved in prim. process in photol. of ketene, 2313; of 4-hydroxybenzil, 2499; *N*-nitrosamines, photoredn., photolimitation, and photoaddn., 1044; partial resoln. of Cr(III) complexes by photoisomerizn., 3381; photocyclizn. and photoaddn. react. of isoquinoline derivs., 1544; 2-propanol in gas phase, effect of addends on prim. proc., 2217; quenching of triplet state of acetone in soln. by amines, mechm., 3426; tetramethyl-3-thio-1,3-cyclobutadiene in presence of O_2 , formn. of $O_2(^1\Sigma)$, 3923
- Photocyclization, aromatic thioketones, 4068
- Photocyclization-oxidation of 1,6-diphenyl-1,3,5-hexatrienes, 528
- Photocycloaddition, enones to olefins, mechm. and stereochem. considerations, 3465; stereospecific, β -subst. styrenes to olefins via S_1 state, 1984
- Photoelectron spectrum, C_2H_3Br , *cis*- and *trans*- $C_2H_2Br_2$, 2- C_2H_3Br , interpret., Br lone pair- π electron interact., 2642; Cl_2CO and Cl_2CS , 737
- Photoisomerization, alkenes in vac. uv, 2400
- Photolysis, aq. 9,10-anthraquinone-2-sulfonate, mechm., 381; benzoic acid vap., 2017; *cis*- and *trans*-butene-2 in vac. uv, 2823; C_2H_5F at 147 nm in gas phase, 1443; chloropentafluoroacetone, quenching by alkanes, 1429; CH_3SCH_3 , kinetics and mechm. in gas phase, 844; $CH_3SC_2H_5$, kinetics and mechm. in gas phase, 1734; di-*t*-butyl peroxide, prim. process, 1531; 2,5- and 2,4-dimethyl pyrrole vap., mechm., 1678; ethyl diazomalonanilate in alcohol, 3719; flash, of OH^\cdot , react. of e_{aq}^- , 2059; 5-hydroxy-1,4-diphenyl-1,2,3-triazolein-*i*-PrOH, 3719; 1-methoxy-1,4-dihydro-1,4-ethenoanthracene, mechm., 395; O_3 in gas phase, kinetics and mechm., 2747; olefins in vac. uv, mechm. of isomerizn. in presence of H_2S , 2400; olefins in vac. uv, mechm., use of H_2S as radical scavenger, 2391; 2,3-pentanedione in gas phase, mechm., 1331; 2,3-pentanedione at 365 nm, mechm., 1338; *c*-pentanone in vac. uv, mechm., 3938; 2- ^{14}C -3-phenylpropionaldehyde in soln., 593; 2-propanol, kinetics and mechm., 2217; tetra(trifluoromethyl)thiophene vap., mechm. of formn. of valence isomers, 2721; 1,1,1-trichloro-2,2-bis(5'-chloro-2'-methoxyphenyl)ethane, mechm. in soln., 55; tyrosine in alk. soln., mechm. from esr and nmr studies of intermediates, 3849
- Photooxidation, dye-sensd. of dienes, role of $O_2(^1\Delta_g)$, 932; of Hg(I) by Ce(IV), 2413; 1-naphthyl-2-phenylethylenes, 528
- Photoresolution, Cr(III) complexes, 3381
- Photosensitization, *neo*- C_3H_{12} by Hg(3P_1), mechm., 1115, 1129; decompn. of cyclo- C_6H_{12} vap. by Cd(2P_1), 2010; HgH detectn. in react. of Hg(6^3P_0) with alkanes and H_2 , 595; Hg(6^3P_1) \rightarrow Hg(6^3P_0) radiationless transn. induced by various molecs., 176
- Photosolvolysis, Cr(III) complexes in DMSO and H_2O , 887
- Picolinic acids, *sec*-pyridinecarboxylic acids, therm. decarboxyln., 3017
- Pictet-Spengler react., synth. of ochrobirine, 1819
- α -Pinene, aromatizn. over Cr_2O_3 , 113; chromyl chloride oxidn., prods. and mechm., 4022; isomerizn. over Al_2O_3 , 61
- Piperazine, and methylpiperazine, Ni(II) bis(β -ketoenolates) adducts, prepn. and props., 2557
- Piperidine, Ni(II) bis(β -ketoenolates) adducts, prepn. and props., 2557
- Piperidylsulfamoyl chloride, ΔG^\ddagger for hydrol., 946
- Platinum, complexes with acetylene derivs., prepn., 1325; cryst. struct. of $(PPh_3)_2PtC_2H_4$, 912; supported on Al_2O_3 , cat. for H_2-H_2O exch., 1900; supported on C, cat. for H_2-HDO exch., mechm., 3686
- Platinum(II), *trans*-chloromethylbis(trimethylarsine)-, cryst. and molec. struct. of adduct with C_6F_6 , 2276; complexes with phenylsulfoxyacetic acid, 3202; complex salts, prepn. and struct. of C_2H_4 adducts from ir, 1596; hydroxy complexes, struct., 3694
- Platinum metals, cats. for hydrogn. of hydrocarbons, 1793
- Polanyi correlations, for E_{act} in abstrn. by RO_2 from hydrocarbons, 2285
- Polarization, of ir irradi. by oriented polycryst. of org. halogen compds., 3255
- Polarography, Pb(II)-diethylenetriaminepentaacetic acid complexes, 3821
- Polycrystals, oriented, of org. halogen compds., formn. on ir alk. halide windows, polarizn. effects on ir, 3255
- Polyhalogen anions, formed in radioactive decay, identificn. by Mössbauer spect., 3037
- Polysisobutylene, dil. soln. props. near θ temp., 305
- Poly- β ,D(1 \rightarrow 4')mannose, cryst. struct., 2030

- Polymerization, methacrylonitrile-styrene- α -methylstyrene, reacn. ratios in radical copolymerizn., 1757; vinyl acetate, kinetics of retardn., 3304
- Polymer solutions, correln. of sedimentn. and visc. data, 305
- Polymer-supported synthesis, succinylated polystyrene for nucleotide synth., 1211
- Polyphosphoric acid, reacns. with cyclobutanones, mechn., 952
- Polysaccharides, capsular of *Klebsiella* K-type 5, 4,6-*O*-(1-carboxyethylidene)-D-mannose as a struct. unit, 2382
- Polystyrene, dil. soln. props. near θ temp., 305
- Porphin, $\alpha\beta\gamma\delta$ -tetraphenyl-, and chelates, tricarbonylchromium complexes, 720
- Porphyrins, intermeds. in the biosynth. of, 2652
- Positronium, annihilation rate in radiol. liq. hydrocarbons, correln. with electron ranges, 2697
- Potassium-graphite, redn. of carbonyls, 3058
- Potassium hydrogen iodate, cryst. struct., 1134
- Potassium iodate, cryst. struct., 1134
- Potassium nitrosodisulfonate (Fremy's salt), synth. of 2-phenethylamine-1,4-benzoquinones, 3075
- Potentiometry, solns. of NaOH and $\text{Pb}(\text{NO}_3)_2$, 184
- Precipitation, from solns. of nickel dioximates, mechn., 2859
- Product development, control of trans. state in redn. of ketones by NaBH_4 , 388
- Propane, radiol., effect of elec. field, 1617
- R*-1,2-Propanediamine, complexes of $\text{Cu}(\text{II})$, circ. dichroism, 3390
- 2-Propanol, oxidn. by N_2O initiated by γ -rays, 1751; oxidn. by $\text{Ru}(\text{IV})$, kinetics and mechn., 2000; photol. in gas phase, 2217
- Propargylic esters, hydrn. of, 1105; prepn. from triacetylenic boranes and Et diazoacetate, 1105
- Propylene carbonate, irradi. of glasses from, esr and opt. spect. of intermeds., 782
- Protecting groups, absence in oligonucleotide synth., 769
- Protonation, of amides, N vs. O, 771; ethers by H_2SO_4 , 445
- Proton magnetic resonance (see Nmr)
- Protons, formn. of ^{134}Cs isomers in nuclear reacn. of ^{237}Np with 20–85 MeV ^1H , 1877; solvated, solvent-struct. effects on reacn. rates, 3073
- Proton transfer, from di-(4-nitrophenyl)methane to alkoxide bases, 24
- Pseudobases, formn. by *N*-methyl diazanaphthalene cations, 917
- Pulse radiolysis, of H_2O - D_2O mixts., 83
- Pyoluterin, and monodeoxypyoluterin, and analogs, synth. and biol. activities, 3223
- Pyrans, AlCl_3 -catd. cleavage to phenols and rearrangement to *o*- or *p*-(pyranlyl)phenols, 3639
- Δ^1 -Pyrazolines, prepn. from diazomethyl phosphonates and norbornene and norbornadiene, 1078
- Pyridazinones, substn., from thermol. of γ -phenylazo- γ -valerolactone, 1767
- Pyridine(s), carboxylates of $\text{Co}(\text{II})$ and $\text{Ni}(\text{II})$, struct., 1307; complexes of pyridine thiols with metal ions, prepn. and spect. props., 3488; derived from *Nauclea diderrichii*, 1478; Me-substd., $\text{Ni}(\text{II})$ complexes, nmr, 2626
- Pyridinecarboxylic acids, therm. decarboxyln., mechn., 3017
- Pyridine-3-sulfonic acid, complexes with $\text{Co}(\text{II})$ and $\text{Ni}(\text{II})$, struct., 1307
- Pyridinium iodides, *N*-methyl-4-alkoxy-, mechn. of therm. decompn., 1188; *N*-methyl-4-alkoxy-, therm. elimin., 1181
- Pyrimidines, nmr and $\text{Eu}(\text{fod})_3$ studies of methoxylated derivs., 1253
- Pyrimidinone derivatives, nmr and $\text{Eu}(\text{fod})_3$ studies, 1253
- Pyrimidone, positi. isomerism in derivs. by nmr, 880
- Pyrochlores, struct. of Sb_6O_{13} , 690
- Pyrolysis (see also Thermal decomposition, Thermolysis), *N*-benzoyl-*N'*-1-cyanocyclohexyl diimide in PhCH_3 soln., 2143; benzyl naphthyl ethers, 259; 3-chloro-3-arylaziridines, kinetics and mechn., 3009; $(\text{CH}_3)_4\text{Sn}$ in toluene carrier, 50; dehydroabietic acid, abietic acid, and levopimaric acid, mechn., 2224; H_2CO , mechn., 992; *N*-methyl-4-alkoxy-pyridinium iodides, alkenes from, 1181; *N*-methyl-4-alkoxy-pyridinium iodides, mechn., 1188; methyl titanium halides, 755; neopentyl xanthates, mechn., 3288; $\text{Pb}(\text{CH}_3)_4$ in PhCH_3 carrier, detn. $D[(\text{CH}_3)_3\text{Pb}-\text{CH}_3]$, 2639; solid NaN_3 , effect of NO and H_2 , 777
- Pyrophosphate, sodium, cryst. struct., 2519
- Pyrrole, 2,5-diMe and 2,4-diMe derivs., mechn. of photol. of vap., 1678
- 3-Pyrrolicarbaldehyde, ethylene acetal, synth., 1961; 1-methyl-, phys. and chem. props., 1961; phys. and chem. props., 1961
- Pyrrroles, prods. of chlorination, 3223
- Pyrrrole-[3,4-*d*]-4-oxazolines, prepn., 2236
- Quantum mechanics, calcn. dipole-moment deriv. in ice, comparison with ir data, 310
- Quartz crystal, adsorpn. of alkylchlorosilanes by, 125
- Quinodimethide, intermed. in synth., trapping by Diels-Alder reacn., 1098
- Quinones, thermol., 270
- Racemization, therm., 1,2-divinylcyclopropane, 2158; therm. oxiranes via oxatrimethylene, 428
- Radicals, confign. of enolized allyl acetylacetone radical from esr, 1096; formed in γ -irradi. of propylene glasses, esr and opt. spect., 782
- Radiolysis, alcohols, rate of reacn. of e_{rel}^- with acid, solvent-struct. effect, 3073; alk. aq. 2-propanol, 1751; cyclopentanes, -pentene, and -pentadiene, esr of radicals, 3982; electron scavenging by org. halides in MTHF, kinetics, 2702; free-ion yields, effect of elec. field, 1617; H_2O - D_2O mixts., 83; kinetics of charge scavenging in polar and nonpolar liqs., 2729; $\text{K}_4\text{Ru}(\text{CN})_6 \cdot 3\text{H}_2\text{O}$, esr of prods., 162; liq. alkanes, free-ion yields and electron ranges, 2667; liq. hydrocarbons, correln. of free-ion yields with positronium-annihilation rates, 2697; $^{28}\text{N}_2$ and $^{30}\text{N}_2$ mixts., search for N + N_2 exch., 1437; N_2O and $\text{N}_2\text{O}-\text{O}_2$ mixts. at high-dose rates, 1557; propylene carbonate glasses, esr and opt. spect. of intermeds., 782; pulse, $\text{CO}-\text{O}_2$ mixts., 3508; pulse, papain in aq. soln., 2833; solid taurine by γ -rays, esr of prods., 43; D-tartaric acid single cryst., esr, 3706; water, with acid, solvent struct. effect, 3073
- Raman spectrum (see also Ir spectrum, Vibrational spectrum), adducts of AlCl_3 or AlBr_3 and $(\text{CH}_3)_2\text{SO}$ or $(\text{CD}_3)_2\text{SO}$, 1157; bis-pyridine and *o*-phenanthroline complexes of mixed halogenosilanes, 2484; $(\text{CH}_3)_3\text{AsI}$, vibrl. assignments and normal coord. anal., 2691; 3-chloro-1,2,5-thiadiazole, 627; complexes of Me_2SnCl_2 and Ph_2SnCl_2 , 3212; KHCO_4 , $\text{K}_2\text{C}_2\text{O}_6$, 1472; laser,

- matrix-isolated $\text{Pd}(\text{N}_2)_3$, 2385; liq. and solid SiH_4 and SiD_4 - SiH_4 mixts., 35; NaNO_3 in D_2O soln., 2951; $\text{Pt}(\text{II})$ complex salts and olefin adducts, vibrl. assignments, 1596; $\text{Sb}(\text{CH}_3)_3$ and $\text{Sb}(\text{CD}_3)_3$, 966; strontium formate single cryst., 1453; trimethylene oxide and D derivs., anal. of vibrl. progs., 2771
- Rare earth acetates, therm. transformns. from DTA data, 3100
- Reaction dynamics, theory of $\text{H}_2 + \text{I}_2$ potl. surfaces, 3916
- Reactivity ratios, methacrylonitrile-styrene- α -methylstyrene radical copolymerizn., 1757
- Rearrangement(s), alkyl shifts in cyclohexenyl cations, 2939; of aromatic thioketones on irradiatn., 4068; indoline compds., 2475; keto pyrrolidones, 2475; in photol. decarboxyl. of phenylpropionaldehyde, 593; $(\text{RO})_2\text{P}(\text{O})\text{C}(\text{OH})(\text{CF}_3)_2$ to phosphate, base-catd., kinetics, 1205; therm. benzyl naphthyl ethers, 259; transannular, in formol. of 1,5-cyclooctadiene monooxide, 2152
- Recoil reactions, in manganese pentacarbonyl halides, 961
- Reduction, 3-benzyl camphors by complex hydrides, stereochem. by nmr, 1376; Birch, of diarylalkanes and triphenylmethanes, 1249; by complex metal hydrides of 3-benzylidene camphors, 438; cyc. ketones by NaBH_4 , mechm., 388; electro-, benzofurazans, kinetics, 263; electrochem. of *as*-triazines, 1581; selective, of nitroolefins, mechm., 1292
- Reduction potentials, amines and carbonyl compds., triplet energies from, 4052; half-wave, for unsatd. cyc. ketones, reln. to triplet energy, 4050
- Resistance, electrolytic cell, as fn. of geom. of cell, 2491
- Resonance effects, in reln. to the Hammett eqn., 1030
- Retention index, correln. of glc data by factor anal., 448
- Rhenium(III), tris(1,1,1,5,5,5-hexafluoropentane-2,4-dionato-), prepn. and props., 8; tris(pentane-2,4-dionato-), prepn. and props., 8
- Rhenium(IV), β -diketone complexes, struct., 1797
- Rhenium(VI), μ -oxo-bis[oxotrichloro(*O*-perrhenylchloride)], cryst. struct., 3607; oxotetrachloroquo-, prepn., props., and cryst. struct., 1811
- β -Rhenium oxotrichloride, negation of prepn. based on cryst. struct., 3607
- Rhodium(I), complexes, reactn. with O_2 , esr, 590; π -complexes with 1,2,5-triphenylphosphole, prepn., props., and reactivity, 2442; phosphole complexes, prepn. and hydrogen. cat., 3714
- Rhodium(III), chloride complexes as cats. in C_2H_4 oxidn., 1698, 1708; hydrido complexes, prepn., kinetics of subsn. reacns., 1089; phosphole complexes, prepn. and hydrogen. cat., 3714
- Rhodium(II) superoxide, as intermed. in autoxidn. reacns. catd. by $\text{Rh}(\text{I})$, 590
- Ring-twisting effects in adducts of azodibenzoyl and cyc. 1,3-dienes, 3315
- Rotational barrier(s), in cyclopropylmethyl cations, from solvol. kinetics, 2432; in styryl anions from nmr, 1246
- Rotational isomerism, of phosphotriesters from nmr, 2111
- Rubidium hexafluorocobaltate(IV), mag. susceptibility, reflect. spect., cryst. struct., and electronic confign., 2447
- Ruthenate(VI), as oxidant for org. compds., 3741
- Ruthenium, electrode potls. of $\text{Ru}(\text{III})/\text{Ru}(\text{0})$ in LiCl-KCl eutectic, 3911
- Ruthenium(I), prod. of radiol. of $\text{Ru}(\text{II})$ complex, esr, 162
- Ruthenium(II), benzene complexes, prepn. and reacns., 3063; esr of radiol. prods. from $\text{K}_2\text{Ru}(\text{CN})_6 \cdot 3\text{H}_2\text{O}$, 162
- Ruthenium(IV), oxidn. of 2-propanol, kinetics and mechm., 2000
- Ruthenium tetroxide, oxidn. of tetrahydrofuran, kinetics and mechm., 3129
- Ryanodine, cryst. studies, 1882
- N*-Salicylideneanthranilic acid, proton. and formn. of complexes with $\text{Cu}(\text{II})$ and $\text{Zn}(\text{II})$, 1609
- Scillabiose, synth., 3373
- Self-association, low-temp. ir study of thiols, 3594
- Semiconduction, in liq. ferric vanadates, 2877; in liq. sodium vanadates, 2871; in liq. V_2O_5 , 2865
- Semiquinone radicals, kinetics of disproportion. from esr data, 3052
- Sepedonin, mass spect., fragmentn. patterns, 821
- Serratenediol triterpenes, isoln. and identificn. from *Lycopepodium lucidulum*, 3280
- Sesquiterpenes, (+)-occidentalol, struct. and synth., from (+)-dihydrocarvone, 340; (+)-occidentalol, synth. and struct., 336; stereochem. of hydroxyachillin by nmr, isoln. from *Artemisia frigida*, 333; synth. of tricyclovetivine, 726
- Sesquiterpenoid(s), synth. of cadinane type, 3272; tetracyc., synth. of (\pm)-ishwarane, 3455
- Shift reagents, use in conformnl. studies of trimethylene sulfite derivs., 521
- 1,2-Shifts, in reactn. of 1-chlorobutane with AlCl_3 , 3179
- Sigmatropic rearrangement, adds. of azodicarbonyl compds. and cyclopentadiene, 371; reversibility of, in adds. of azodibenzoyl and cyc. 1,3-dienes, 3315
- Silane, trimethylfluoro-, base-catd. hydrol., 3087; vibrl. spect. of liq. and solid SiH_4 and SiD_4 - SiH_4 mixts., 35
- Silanes, mixed halogeno-, prepn. of complexes with pyridine and *o*-phenanthroline, struct. from vibrl. spect., 2484
- Silica, amorphous, adsorp. of *n*- $\text{C}_4\text{H}_9\text{NH}_2$, 907
- Silica gel, adsorp. of CH_3NH_2 at 266 °K, 1666; adsorp. of $(\text{CH}_3)_2\text{NH}$ and $(\text{CH}_3)_3\text{N}$ at their bp, 2451; ΔH_{ads} of SO_2 , 1241
- Silicon, hydrazines, reactn. with BX_3 , CO_2 , CS_2 , 562
- Silicon difluoride, reactn. with acetylene, 459; reactn. with substd. acetylenes, 465
- Silver(I), cyano complexes, formn. constns., 1144
- Silver(II), dinitrato-2,2'-dipyridyl-, cryst. struct., 315
- Silver cyanide, soly. prod., 1144
- Silver reduction, on bimolec. lipid membranes, 1448
- Silver tellurite, soly. prod. (aq.), 1788
- Silyl-lithium, mono-, di-, and triphenyl-, reacns. with 9-phenylfluorene, 3761
- Simmons-Smith cyclopropanation, stereochem., 2928
- Simmons-Smith reaction, of hex-2-enopyranosides, 2909
- Sodium azide, therm. decompn. of solid, effect of NO and H_2 , 777
- Sodium chloride, phase diagrams of system with H_2O -dioxane, 3388
- Sodium ion, preferential solvn. by various solvents, from nmr data, 3935
- Sodium nitrate, conduct., dens., visc. in H_2O and dioxane- H_2O at 25 °C, 2845
- Sodium nitrite, Raman and ir spect., conduct., visc., dens., and molal vol. of solns. in D_2O , degree of assocn., 2951
- Sodium pyrophosphate, cryst. struct., 2519
- Sodium ruthenate oxidations, 3741
- Sodium tetraphenylboride, molal vol., dens., ΔC_p , and visc., 3167

- Sodium vanadates, elec. conduct. and visc. of liq., 2871
Solid-gas organic reactions, *p*-phenylphenol and isobutene, 2882
Solid-phase synthesis, monotrityl ethers of sym. diols, 2892; oligothymidylates, 1211
Solids, ionic conductn. in, theory, 574
Solubility, CCl_4 in compressed gases, 660; Hg in aq. NaCl soln., 3124; I_2 in org. solvents, applicn. of soly.-parameter theory, 834
Solubility-parameter theory, applicn. to I_2 in mixed org. solvents, 834
Solubility product, AgCN , 1144; Ag_2TeO_3 in H_2O , 1788
Solutions of nonelectrolytes, applicn. of soly.-parameter theory, 834
Solvation, of Na^+ , by various solvents, from nmr data, 3935; radicals by triethylamine, 2499
Solvent effect, on carbanion cyclizn. and protonation, 678; in sec.-D isotope effects in Menshutkin reactn., 982; in S \rightarrow T absorpn. of aromatic ketones, 3601; in substn. reactn. with Ni(II), 402; therm. decompn. of *t*-alcohol *N*-arylcabamates, 3478
Solvent structure, and ΔC_p^* , for hydrol. of *t*-BuCl in aquo-organo mixts., 1353
Solvolytic, alkylchlorosulfates, kinetic solvent isotope effect, 434; *t*-BuCl in H_2O , role of ion-pair intermeds. from kinetic data, 167; compds. containing a conformationally rigid cyclopropane ring, 2432; deuterated norborneol brosylates, 618; hindered benzyl chlorides, kinetics, 3965; *p*-nitrophenyl chlorosulfate in CH_3OH , kinetics, 1907; 1- ^{14}C -2-phenylethyl tosylate, mechm., 1371; substd. benzyl chlorides in $\text{EtOH-H}_2\text{O}$, mechm., 2318; substd. benzyl trifluoroacetates, solvent isotope effects, 1886; sulfonium ion, solvent effects on ΔV^* , 2270; trifluoroacetates, sec. isotope effects and mechm., 2175
Spirobenzylisoquinolines, synth., 1819, 3028
Spiroepoxides, reactn. with 2-lithio-1,3-dithianes, 1407, 1414
Stereochemistry, mass spect. of epimeric *gem*-diesters, 1539
Steric approach, control of trans. state in reductn. of ketones by NaBH_4 , 388
Steric effects, in hydrol. of 1-acyl-2-thiohydantoin, 3780; in solvol. of substd. benzyl chlorides, 2318
Steroid C-17 functionalization, applicn. of 2-lithio-1,3-dithiane reactns., 1414
Steroids, mechm. of deamination, confign. of prods., 364; new method for stereospecific substn., 810; stereospecific introdn. of substituents via 2-lithio-1,3-dithiane-spiroepoxide reactns., 1407; synth., Diels-Alder addn. to vinyl dihydronaphthalenes, 2371; water-sol., synth. and stereochem., 3993
Stibiconite, Mössbauer ^{121}Sb spect. and struct., 3648
Stilbene episulfide, isomerizn. in DMF, 3930
Stochastic approach to chem. kinetics, 3104
Strontium formate, ir and Raman spect., 1453
Styrene, β -substd., stereospecific photocycloaddn. to olefins via S_1 state, 1984
Substituent effects, in hydrol. of benzyl trifluoroacetate, 1886; in oxidn. of substd. phenols by Mn(III) complex, 3437; theory in reln. to the Hammett eqn., 1030
Substitution, at Co(III), mechm. of octahedral, 2739; at Ni(II), kinetics, 402
Sugars, branched-chain, prepn. from epoxides, 226
Sulfenes, reactn. with $(\text{C}_6\text{H}_5)_3\text{P}$, 866
Sulfonation, aromatic, kinetics and mechm., 1591; halogenobenzenesulfonic acids, 1574
Sulfonium ion, effect of solvent on ΔV^* for solvol., 2270
Sulfur, complexes of pyridine thiols with metal ions, prepn. and spect. props., 3488
Sulfur dioxide, calorimetric ΔH_{ads} on magnesia at 423 °K, 2817; calorimetric ΔH_{ads} below monolayer coverage on heat-treated $\gamma\text{-Al}_2\text{O}_3$ at 423 °K, 2537; heats of adsorpn. on SiO_2 gel, 1241
Sulfur fluorides, ^{19}F and ^1H nmr, 2428
Sulfuric acid, acidity functions in 70% DMSO(aq.), 1513; sulfonation of phenylmethanesulfonic acid, kinetics, 1591
Sultines, dipole moments and conformns., 548
Sultones, dipole moments and conformns., 548
Symmetry rule, circ. dichroism of nitrate esters, 1719
Tantalum(V), complexes with 1,2,5-triphenylphosphole derivs., 1008
D-Tartaric acid, esr of γ -irradn. of single cryst., 3706
Taurine, esr of radicals formed during γ -radiol. of solid, 43
Tautomers, ring-chain of 3-phenyl-3(2-alkylaminoethyl)-phthalides, synth., 3886
Technetium, (IV), (V), and (VI), chlorides and oxychlorides, prepn. and identifi., 1807
Technetium(VII), chlorotrioxo-, prepn., 1807
Technetium hexachloride, nonexistence of, 1807
Tellurite, Ag, soly. prod. (aq.), 1788
Tellurium, ^{125}Te Mössbauer spect. of thiourea complexes, 3677; three-center-two-electron bonding in thiourea complexes, 3677
Tellurium halides, Mössbauer spect., 3037
Tetraalkylammonium bromides, aq. solns., isotherm. and adiabatic compress., 1094
Tetraalkylammonium salts, activn. parameters for decompn. in soln., 1297
Tetra-*n*-butylammonium bromide, conduct. and visc. of solns. with CCl_4 , 1600
Tetrabutylammonium chloride, molal vol., dens., ΔC_p , and visc., 3167
Tetracyanoethylene oxide, applicn. in genern. of azomethine ylides, 534
Tetracyclic precursors for triterpenoid synth., 1944
Tetracyclo[3.3.1.1 3,7 .0 1,2]decane, synth., 3958
Tetrahydroberberine alkaloids, Oppenauer oxidn., 1544
Tetrahydrofuran(s), 2-alkoxy-, from ozonol. of dihydropyran, 1783; oxidn. by RuO_4 , kinetics and mechm., 3129
Tetramethyllead, pyroly. by PhCH_3 carrier method, 2639
1,4,7,9-Tetramethyl-2,3,10,11-tetraazatricyclo[6.3.1.0 2,7]-dodeca-3,9-diene, prepn. from acetylacetone and NH_2NH_2 , 612
Tetramethylurea, complex with BF_3 , struct. from nmr data, 713
Tetranitratomanganate(II), Na and K salts, prepn. and props., 3326
Tetranitratomanganate(III), nitronium- $(\text{NO}_2)^+$ salt, prepn. and props., 3326
Tetraphenylarsonium chloride, molal vol., dens., ΔC_p , and visc., 3167
Tetraphenylphosphonium chloride, molal vol., dens., ΔC_p , and visc., 3167
Tetrapotassium hexacyanoruthenate trihydrate, esr of prods. of radiol., 162
1,2,3,4-Tetra(trifluoromethyl)-5-thiobicyclo[2.1.0]pentene-2, formn. in photol. of tetra(trifluoromethyl)thiophene, ir and mass spect., 2721
Tetrazoles, 6-aryl[1,2,4]triazolo[4,3-*d*], nmr, 1786

- Thallium(III) trifluoroacetate, in hydrol. of thioacetals, 3740
- Theory of reaction rates, 3104
- Thermal analysis, fluoride amines of bivalent metals, 567
- Thermal decomposition (see also Pyrolysis, Thermolysis), *t*-alcohol *N*-arylcarbamates, solvent effects and mechm., 3478; aralkyl carbonates, kinetics and mechm., 1770
- Thermal isomerization, MeNC, unimolec. behavior, 3251
- Thermochemistry, binary and ternary systems among MeOH, acetone, and cyclohexane, 479; CCl₄-*n*-alkanes, energies and enthalpies of mixing, 3799; d[(CH₃)₃-Sn-CH₃] from pyrol. in toluene carrier, 50; excess Gibbs free energy for *cis*-decalin-cyclohexane mixts., 1978; fusion curves for mixts. of formates of alk. metals and alk. earths, 1972; ΔH_f of allylic ions, 3973; H-bond rupture in liq. HDO, 1655; ΔH_{298}° (C₆F₆, g), detn. by combustn. without auxil. subst., 2935; ΔH_{ads} of (CH₃)₂NH and (CH₃)₃N at their bp on SiO₂ gel and SiO₂-Al₂O₃, 2451; ΔH_{ads} of CH₃NH₂ on SiO₂ gel and SiO₂-Al₂O₃ at 266 °K, 1666; heats of soln. and diln. of LiClO₄ in H₂O and dioxane-H₂O mixts., 1627; ΔH_{mix} for 3-ethyl-3-pentanol in CCl₄, 3207; ΔH_{ads} of SO₂ on magnesia at 423 °K, 2817; molal vol. and heat capacities of aq. solns. of Bu₄NBr, NaBPh₄, Ph₄PCl, and Ph₄AsCl, 3167; soly. of nonpolar gases in H₂O, 133; theory of ΔS_{mix} in ternary molten salts, 1345
- Thermogravimetric analysis, Cu₂SO₄, 3872
- Thermolysis (see also Pyrolysis, Thermal decomposition), anthraquinone, 270; 1-(*o*-carbethoxyphenyl)-3-(*o*-cyano-phenyl)-triazene, 1775; flash, *o*-hydroxyacetophenone yielding benzofuran and cyclopentadienyldienecarbonyl, 2513; Δ^3 -1,3,4-oxadiazolin-2-ones, mechm., 2326; phenanthraquinone, 270; γ -phenylazo- γ -valerolactone, 1767; pyridinecarboxylic acids, mechm., 3017
- Thiathiophenes, cryst. struct. of N isosteres, 324
- Thioacetals, as carbonyl protectors, removal by Ti(III), 3740
- 8,2'-Thioanhydroguanosine, synth., props., and redn., 1100
- 8,3'-Thioanhydroguanosine, synth. and props., 3276
- 8,2'-Thioanhydropurines, synth. and props., 2249
- Thiobenzoates, from reactn. of org. iodides with cuprous thiobenzoate, 4056
- 2-Thiohydantoins, 1-acyl-, alk.-hydrol. kinetics, 3780; hydrol. mechm., 3767
- Thioketones, aromatic, photocyclizn., 4068; photochem. reactn. with O₂, 3923
- Thioketyls, *g*-values and hyperfine struct. in esr, 1390
- Thiols, H-bonding, from ir data, 3594
- Thiones, oxidn. with peracetate, 2568
- Thiophene, tetra(trifluoromethyl)-, formn. valence isomers by photol., 2721
- Thiophosgene, photoelectron spect. and orbital struct., 737
- Thiosulfones, dipole moments and conformns., 548
- Thiranes, stereoisomerizn., 3930
- Thiyl radical, intermed. in photoisomerizn. of alkenes, 2400
- L*-Threose-4-*d* (4S), synth., 2617
- Tin, tetramethyl-, pyrol. by toluene carrier tech., 50
- Tin, trimethyl-, carbamates, nmr and rotl. energies, 1386
- Tin(IV), synth. and struct. of R₂SnX₂ where R is an alkyl group and X is SO₂F, SO₂CF₃, or PO₂F₂, 1843
- Tin(II) chloride, insertn. reactns. with (π -C₅H₅)₂Fe₂(CO)₃-P(O)(C₆H₅)₃, kinetics, 972
- Tin(IV) dichloride, dimethyl-, spect. and struct. of complexes, 3212; diphenyl-, spect. and struct. of complexes, 3212
- Titanium, cat. for decompn. of alkyl chlorides, 2167
- Titanium(IV), halides, methyl, ir and nmr, 747; halides, methyl, therm. decompn., 755
- Titanium(IV) chloride, with CF₃CO₂H as aromatic halogen reagent, 1233
- Titanium(IV) vanadate, synth., therm. stability, and ion exch. props., 2071
- Transannular reaction, in bromination of *cis*-5-cyclooctene-1,2-dione, 1548
- Transition elements, first-row, complexes with HOC(CF₃)₂-COOH, 939
- Transition-metal fluorides, NH₄MF₃, therm. decompn. and ir, 1529
- Transition-metal ions, cats. for decarboxyln. of 3-oxoglutarate, 3573
- Transition metals, complexes with tetraphenylporphin, 720; fluoride amines, therm. decompn., 567
- Transition metals(II), 3-ketoglutarates, prepn. and struct., 826
- Transition-state theory, concept of min. state dens., 3386
- Trialkylphosphine-benzylidenemalononitrile 1:1 adducts, nmr, struct., 1713
- Triazene(s), alumina-catd. decompn., 2544; 1-(*o*-carbethoxyphenyl)-3-(*o*-cyanophenyl)-, thermol., 1775; synth. and reactns. of 1-alkyl-3-(*o*-carbalkoxyphenyl)-, 2544
- 1,2,3-Triazines, synth. of 3-alkyl-, 2544
- as*-Triazines, electrochem. redn., 1581
- Triazoles, photol. and thermol. of 5-hydroxy-1,4-diphenyl-1,2,3-triazole, 3719
- Triboelectric discharge, decompn. of CH₄, mechm., 3813
- 2,4,6-Tri-*t*-butylbenzyl cation, hindered, cyclizn. to 1,1-dimethyl-4,6-di-*t*-butylindane, 281
- 2,4,6-Tributylbenzyl chloride, solvol. kinetics, 3965
- Tricalcium silicate, hydrn., kinetics and mechm., 701
- 1,1,1-Trichloro-2-alken-4-ones, reactn. with base, 2561
- 1,1,1-Trichloro-2,2-bis(5-chloro-2-methoxyphenyl)ethane, photol. in soln., mechm., 55
- 2,2,2-Trichloroethoxycarbonyl group, protection of aldols by, 3846
- 1,1,1-Trichloro-2-methoxy-4-alkanones, formn. and base-catd. rearr., 2561
- 2,4,6-Trichloro-*s*-triazine, a coupling reagent for amino acids and amino sugars, 1987
- Trichothecin, biosynth., 3310
- Tricyclo[3.2.1.0^{2,7}]octanes, synth., 3455
- Tricyclo[5.2.2.0^{2,6}]undec-2(6)-ene-8-one, 1-methyl-, synth., 1882
- Tricyclovetivene, synth., 726
- Trifluoroacetic acid, ionic assocn. and conduct. of electrolytes in, 3789
- Trifluoroethane-1,1,1-*d*₃, electrochem. synth., 3084
- Trifluoromethyl- β -diketonates, of In(III), ligand-exch. mechm. from nmr data, 3950
- Trifluoromethyl- β -diketones, complexes of In(III), 2622
- Trimethylamine, ΔH_{ads} at 276 °K on SiO₂ and SiO₂-Al₂O₃, 2451
- Trimethylantimony, pyrol. by PhCH₃-carrier method, 966
- 2,4,6-Trimethylbenzyl chloride, solvol. kinetics, 3965
- Trimethylene, racemizn. of *trans*-1,2-divinylcyclopropane, 2158
- Trimethylene oxide, ir, anal. of vibr. progressions, 2761; Raman spect., anal. of vibr. progressions, 2771
- Trimethylene sulfite, conformns. from nmr data, 521
- Trimethylfluorosilane, base-catd. hydrol., 3087

- Trimethyl orthobenzoate, electrochem. synth. from α, α' -dimethoxystilbene, 3424
- Trimethylsilyl ethers and esters, nmr, 3913
- 1,3,5-Trinitrobenzene, complex with aniline, 129; Meisenheimer complex with OH^- , equil. const., 1729
- 2,4,7-Trinitro-9-fluorenyl *p*-toluenesulfonate, effect of press. on kinetics of acetol., mechm., 1303
- Triphenylmethane, Birch redn., 1249
- Triphenylmethoxy acetates, as protecting grps., prepn. and removal, 1283
- Triphenylphosphine, reactn. with sulfenes, 866
- Triphenylphosphine platinum, cryst. struct. of $(\text{PPh}_3)_2\text{-PtC}_2\text{H}_4$, 912
- 1,2,5-Triphenylphosphole, π -complexes with Rh(I) salts, prepn., props., and reactivity, 2442; and derivs., complexes with transn. metals, 1008
- Triplet state, energy level in ketene from kinetic data, 2313; type excited in aromatic ketones from phosphoresc. excitn. studies in various solvents, 3601; yields for benzocycloalkenes, variation with ring size, 3298
- Tripyrrane, aminomethyl-, synth., 2652
- Triterpenes, serratenediol group, isoln. and identificn., 3280
- Triterpenoids, synth. of tetracyc. precursors, 1944
- Tropolone(s), mass spect., fragmentn. patterns, 821; tautomerism by ^{13}C nmr, 1975
- Tyrosine, esr of radicals produced in photodecompn. in alk. soln., 3849
- Tyrosyl radical, prodn. from photol. of tyrosine in alk. soln., esr and struct., 3849
- Ultrasonics, polymerizn. of substd. benzenes, 1743
- Unimolecular reactions, therm. isomerizn. of MeNC, 3251
- $\beta\gamma$ -Unsaturated ketones, prepn., 2712
- Uracil, positl. isomerism in derivs. by nmr, 880
- Urazoles, prepn. by transcarbamylation, 2661
- Urethanes, *t*-alcohol, therm. decompn., solvent effects and mechm., 3478
- Uridine, bromo- and dibromo-, prepn., 253; prepn. ^{13}C -labelled, conformn. by ^{13}C nmr, 773
- Uv spectrum (see also Electronic spectrum), Meisenheimer complex of 1,3,5-trinitrobenzene with OH^- , equil. const., 1729; 1,2,5-oxadiazole(furazan), anal. and assignments, 2088; solvent effects on tautomerism of substd. penta-methylene-2-thiohydantoin, 2423
- Vacuum, use of accommodation pumping, 957
- Valeric acid, aq., contact angles on various surfaces, 1613
- Vanadate(V), cryst. struct. CsVOF_4 , 3700
- Vanadate melts, elec. conduct. of ferric vanadates, 2877; elec. conduct. of sodium vanadates, 2871
- Vanadium, synth., therm. stability and ion-exch. props. of $\text{Ti}_3(\text{V}_2\text{O}_6)_2 \cdot n\text{H}_2\text{O}$, 2071
- Vanadium pentoxide, elec. conduct. of liq., 2865
- Vapor-liquid equilibria, CCl_4 -gas systems at elevated pressures, 660; cyclohexane-*cis*-decalin mixts., 1978
- Vapor pressure, of H_2O , and degree of H-bonding, 1088
- Vibrational relaxation, in at. recombs., theory, 3832
- Vibrational spectrum (see also Ir spectrum, Raman spectrum), bis-pyridine and *o*-phenanthroline complexes of mixed halogenosilanes, 2484; 3-chloro-1,2,5-thiadiazole, 627; overtones in SH stretching vibrn. in thiols, evidence for self assocn., 3594; $\text{ReOCl}_4 \cdot \text{OH}_2$, 1811; SiH_4 in liq. and solid, 35; trimethylene oxide and D derivs., anal. of vibr. progressions, 2761, 2771
- Vinyl acetate, polymerizn. and retardn., kinetics, 3304
- Vinylacetic acid, in therm. isoms. of crotonic acid, 1224
- Vinyl bromide, photoelectron spect., assigns. and interpretn., Br lone pair- π electron interactn., 2642
- Vinylmagnesium chloride, reactn. with fatty acids, 2786
- Vinylphosphines, reactn. with diMe acetylenedicarboxylate, formn. of cyc. ylides, 3625
- Virial coefficients, CCl_4 -gas mixts., 2nd cross coeffs., 660
- Viscosity, $(n\text{-C}_4\text{H}_9)_4\text{NBr} + \text{CCl}_4$ system, 1600; of liq. sodium vanadate, 2871; NaNO_3 in H_2O and dioxane- H_2O at 25 $^\circ\text{C}$, 2845; polymer solns., correln. with sedimentn. data, 305
- Volume of activation, acetol. of 2,4,7-trinitro-9-fluorenyl *p*-toluenesulfonate, 1303; solvol. of sulfonium ion, effect of solvent, 2270
- Water, contact angle dependence on drop size, 2419; estn. of fraction of non-H-bonded moles. from vp, 1088; H-bond in ice, calcn. of dipole moment deriv., 310; HDO, H-bond rupture equil. in liq. from ir data, 1655; phase diagrams of system with NaCl-dioxane, 3388; radiol. of H_2O - D_2O mixts., 83; radiol. kinetics, 2729; soly. in, nonpolar solutes, thermo. data, 133
- Xanthates, neopentyl-, mechm. of pyrol., 3288
- Zinc(II), complex with *N*-salicylideneanthranilic acid, prepn., 1609
- Zwitterions, 1:1 adduct benzyldenemalononitrile-trialkylphosphine, struct. from nmr, 1713

AUTHOR INDEX

Under each name are listed, in chronological order of publication, all articles in which an author has participated.

- Aarons, L. J.**
Electron spin resonance studies of thiocarbonyl anion radicals. L. J. Aarons and F. C. Adam, 1390.
Conformational studies of the benzophenone and thiobenzophenone radical anions. F. C. Adam and L. J. Aarons, 1427.
- Absar, I.**
A semi-empirical analysis of the electronic spectrum and molecular structure of formaldehyde. I. Absar, C. S. Lin, and K. L. McEwen, 646.
A semi-empirical analysis of the electronic spectra and molecular structures of hydrogen cyanide and carbon dioxide. I. Absar and K. L. McEwen, 653.
- Ackermann, K.**
A new synthesis of 5-phenyl-2,3-dihydro- and 2,3,4,5-tetrahydro-1*H*-2-benzazepin-1-ones. K. Ackermann, D. E. Horning, and J. M. Muchowski, 3886.
- Adachi, G.**
Thermal transformation in anhydrous rare earth acetates. G. Adachi and E. A. Secco, 3100.
- Adam, F. C.**
Electron spin resonance studies of thiocarbonyl anion radicals. L. J. Aarons and F. C. Adam, 1390.
Conformational studies of the benzophenone and thiobenzophenone radical anions. F. C. Adam and L. J. Aarons, 1427.
Electron spin resonance studies of γ -ray irradiated single crystals of D-tartaric acid. J. K. Mulchinok, F. R. Hallett, and F. C. Adam, 3706.
- Addas, A. R.**
Synthesis of 1-methyl-tricyclo[5.2.2.0^{2,6}]undec-2(6)-ene-8-one. C. Mercier, A. R. Addas, and P. Deslongchamps, 1882.
- Ahmed, Q. A.**
The total synthesis of (\pm) ochrobirine. B. Nalliah, Q. A. Ahmed, R. H. F. Manske, and R. Rodrigo, 1819.
- Ahmed, R.**
The interception of *N*-dibenzylaminonitrene generated from *N*-azido dibenzylamine. R. Ahmed and J.-P. Anselme, 1778.
- Akhtar, M. H.**
Thermal decomposition of stereoisomeric 3-aroyl- and 3-carbomethoxyaziridines in acetonitrile. J. W. Lown and M. H. Akhtar, 2236.
- Alcock, W. G.**
Chemical reactions of methane in a triboelectric discharge. W. G. Alcock, E. J. Hayward, B. Mile, and B. Ward, 3813.
- Allen, A. D.**
Ammine complexes of osmium(II). A. D. Allen and J. R. Stevens, 3093.
- Amano, Y.**
(+)-Occidentalol: absolute stereostructure and total synthesis. Y. Amano and C. H. Heathcock, 340.
- Amberg, C. H.**
Infrared investigation of H₂S adsorption and decomposition on alumina and on alumina supported molybdenum sulfide. T. L. Slager and C. H. Amberg, 3416.
- Anagnostopoulos, A.**
Studies of metal carboxylates. Part II. Cobalt(II) and nickel(II) complexes of certain pyridine carboxylic acids and pyridine-3-sulfonic acid: magnetic and spectral studies. A. Anagnostopoulos, R. W. Matthews, and R. A. Walton, 1307.
- Anand, S. C.**
Phase equilibria in the systems acetone-methanol, acetone-cyclohexane, methanol-cyclohexane, and acetone-methanol-cyclohexane. A. N. Campbell and S. C. Anand, 479.
Densities, excess volumes, surface tensions, viscosities, and dielectric constants, of the systems: methanol-cyclohexane, acetone-methanol, acetone-cyclohexane, and methanol-cyclohexane-acetone. A. N. Campbell and S. C. Anand, 1109.
- Ananthanarayan, K. A.**
Equilibria studies on tetraalkylcyclohexenyl cations. K. A. Ananthanarayan and T. S. Sorensen, 3550.
- Anderson, H. J.**
Pyrrole chemistry. XIV. Some chemical and physical properties of 3-pyrrolecarbaldehyde and 1-methyl-3-pyrrolecarbaldehyde. H. J. Anderson and H. Nagy, 1961.
- Anderson, J. W.**
A convenient synthesis of monobromogermane. J. W. Anderson, G. K. Barker, J. E. Drake, and R. T. Hemmings, 1607.
- Anderson, W. K.**
Chloroacetylation of 1-azaphenothiazine. J. W. Steele, W. K. Anderson, and W. F. Trager, 1026.
- Anglesey, J. P.**
Collisional deactivation rates of electronically excited molecular ions. III. O₂⁺ ($b^4\Sigma_g^-$). G. I. MacKay, J. P. Anglesey, and R. E. March, 2516.
- Anselme, J.-P.**
The interception of *N*-dibenzylaminonitrene generated from *N*-azido dibenzylamine. R. Ahmed and J.-P. Anselme, 1778.

Anteunis, M.

Nuclear magnetic resonance experiments on acetals. 35. Proton magnetic resonance spectra and quantitative conformational analysis of 4-fluoro-methylated-6-Me-1,3-dioxanes. P. Dirinck and M. Anteunis, 412.

Nuclear magnetic resonance experiments on acetals. 36. Proton magnetic resonance spectra and quantitative conformational data in 5-fluoromethylated-5'-Me-1,3-dioxanes. M. Anteunis and P. Dirinck, 423.

ApSimon, J. W.

Reactions of chloramines with Ag(0) and Ag(I) states. O. E. Edwards, D. Vocelle, and J. W. ApSimon, 1167.

Approaches to the synthesis of triterpenoids. II. Some tetracyclic precursors suitable for conversion into pentacyclic triterpenoids. J. W. ApSimon, P. Baker, J. Buccini, J. W. Hooper, and S. Macaulay, 1944.

Chemical shift. VII. The long-range shielding effects of the cyano group. J. W. ApSimon, H. Beierbeck, and D. K. Todd, 2351.

Conversion of nonlinear shift reagent plots to linear plots. J. W. ApSimon, H. Beierbeck, and A. Fruchier, 2725.

Automatic sorting of signals in shift reagent spectra. J. W. ApSimon, H. Beierbeck, and A. Fruchier, 2905.

Arai, M.

The racemization of *trans*-1,2-divinylcyclopropane. M. Arai and R. J. Crawford, 2158.

Armand, J.

The electrochemical reduction of compounds with the $-\text{N}=\text{C}-\text{C}=\text{N}-$ group. III. *as*-Triazines. J. Pinson, J.-P. M'Packo, N. Vinot, J. Armand, and P. Bassinet, 1581.

Armitage, I.

Evaluation of the binding constants, bound chemical shifts, and stoichiometry of lanthanide-substrate complexes. I. Armitage, G. Dunsmore, L. D. Hall, and A. G. Marshall, 2119.

Applications of lanthanide shift reagents to the identification of ^{13}C resonances. I. Armitage, J. R. Campbell, and L. D. Hall, 2139.

Armstrong, D. A.

Pulse radiolysis of aqueous papain. J. R. Clement, D. A. Armstrong, N. V. Klassen, and H. A. Gillis, 2833.

Arnold, D. R.

Stereochemistry of the cycloaddition of singlet excited β -substituted styrenes to olefins. O. L. Chapman, R. D. Lura, R. M. Owens, E. D. Plank, S. C. Shim, D. R. Arnold, and L. B. Gillis, 1984.

Artman, D.

Desorption of hydrogen from palladium and palladium-silver alloys followed by differential scanning calorimetry. D. Artman and T. B. Flanagan, 1321.

Ashcroft, S. J.

The thermal decomposition of *N*-arylcabamates of *t*-alcohols. 2. Effects of solvent, temperature, and substituents. S. J. Ashcroft and M. P. Thorne, 3478.

Ashraf, M.

Base-catalyzed deuteration of tricarbonylchromium complexes. M. Ashraf, 118.

Aspinall, G. O.

Base-catalyzed degradations of carbohydrates. II. β -Elimination reactions of 4-*O*-substituted methyl (methyl 2,3-di-*O*-methyl- β -D-glucopyranosid)uronates. G. O. Aspinall and P. E. Barron, 2203.

Atkinson, G. F.

Equilibrium constants for 2,3-dihydroxypyridine and its complex with iron(III) in 1M hydrochloric acid. K. E. Curtis and G. F. Atkinson, 1649.

Atlani, P.

The importance of conformation in the ozonolysis of acetals. P. Deslongchamps, C. Moreau, D. Fréhel, and P. Atlani, 3402.

The importance of conformation of the tetrahedral intermediate in the hydrolysis of esters. Selective cleavage of the tetrahedral intermediate controlled by orbital orientation. P. Deslongchamps, P. Atlani, D. Fréhel, and A. Malaval, 3405.

Aubke, F.

Gallium(III)-trisfluorosulfate. A. Storr, P. A. Yeats, and F. Aubke, 452.

The synthesis and structural studies of some dialkyltin(IV)-salts of strong monobasic acids, T. H. Tan, J. R. Dalziel, P. A. Yeats, J. R. Sams, R. C. Thompson, and F. Aubke, 1843.

Au-Young, Y.-K.

A convenient synthesis of L(+)-muscarine. J. Whiting, Y.-K. Au-Young, and B. Belleau, 3322.

Avdovich, H. W.

Selectivity in NBS bromination. I. The reaction of methyl enol ethers of cyclohexane-1,3-diones. A reexamination. D. V. C. Awang, A. Vincent, W. L. Wilson, and H. W. Avdovich, 104.

Isomeric pyrimidone and uracil derivatives obtained by reaction of barbiturates with diazomethane. G. A. Neville and H. W. Avdovich, 880.

Awang, D. V. C.

Selectivity in NBS bromination. I. The reaction of methyl enol ethers of cyclohexane-1,3-diones. A reexamination. D. V. C. Awang, A. Vincent, W. L. Wilson, and H. W. Avdovich, 104.

- Ayasse, C.**
Pyrochlores. VII. The oxides of antimony: an X ray and Mössbauer study. D. J. Stewart, O. Knop, C. Ayasse, and F. W. D. Woodhams, 690.
- Bachelor, F. W.**
The structure and stereochemistry of hydroxyachillin. F. W. Bachelor, A. B. Paralakar, and S. Itô, 333.
The deamination of the 3 α - and 3 β -aminocholestanes and their amide derivatives. F. W. Bachelor and E. H. White, 364.
The chromyl chloride oxidation of α -pinene. F. W. Bachelor and U. O. Cheriyan, 4022.
- Bachers, G. E.**
The reaction of some isothiazolium salts with sulfur in pyridine. G. E. Bachers, D. M. McKinnon, and J. M. Buchshriber, 2568.
- Back, R. A.**
Thermal reactions of sodium azide in the presence of nitric oxide and hydrogen. R. A. Back and W. Nip, 777.
- Baczynskyj, L.**
Cancetrine. II. The structure of cancetrine. R. Rodrigo, R. H. F. Manske, D. B. MacLean, L. Baczynskyj, and J. K. Saunders, 853.
Cancetrine. III. Dehydroderivatives. D. B. MacLean, L. Baczynskyj, R. Rodrigo, and R. H. F. Manske, 862.
Cancetrine. IV. Acetolysis products of cancetrine methiodide. R. Rodrigo, R. H. F. Manske, V. Smula, D. B. MacLean, and L. Baczynskyj, 3900.
- Bader, L. W.**
Hydrogen atom recombination on glass surfaces. L. W. Bader and H. D. Gesser, 2305.
- Badr, M. Z. A.**
Molecular rearrangements. Part I. The thermal rearrangement of the benzyl naphthyl ethers. M. Z. A. Badr and H. A. H. El-Sherief, 259.
- Baer, H. H.**
Reactions of nitro sugars. XXVI. Analysis and separation of stereoisomers by nuclear magnetic resonance spectroscopy and column chromatography of benzyldene derivatives. H. H. Baer and W. Rank, 1216.
Selective reduction of carbohydrate nitroolefins. H. H. Baer and W. Rank, 1292.
- Bailey, K.**
A conformational study of lysergic acid and *iso*-lysergic acid dialkylamides by proton magnetic resonance spectroscopy. K. Bailey and A. A. Grey, 3876.
- Bailey, M. G.**
Benzene radical cation formation on hydrogen mordenite. The role of adsorbed oxygen. N. H. Sagert, R. M. L. Pouteau, M. G. Bailey, and F. P. Sargent, 2041.
- Baird, M. C.**
Five-coordinate tertiary phosphine and arsine adducts of copper(hexafluoroacetylacetonate)₂. R. A. Zelonka and M. C. Baird, 1269.
Benzene complexes of ruthenium(II). R. A. Zelonka and M. C. Baird, 3063.
- Baker, P.**
Approaches to the synthesis of triterpenoids. II. Some tetracyclic precursors suitable for conversion into pentacyclic triterpenoids. J. W. ApSimon, P. Baker, J. Buccini, J. W. Hooper, and S. Macaulay, 1944.
- Ballan, D. G.**
The vacuum ultraviolet photolysis of cyclopentanone. A. A. Scala and D. G. Ballan, 3938.
- Ballard, J. G.**
The preparation and acetolyses of 5-deuteriated *exo*-2-norbornyl-*p*-bromobenzenesulfonates. N. H. Wertsuik, R. R. MacDonald, R. W. Ouwehand, W. L. Chan, F. P. Cappelli, J. G. Ballard, R. E. Young, R. E. Massey, G. Timmins, I. Goodwin, A. Walling, and Y. Teruta, 618.
- Barclay, L. R. C.**
Sterically hindered aromatic compounds. III. Acid-catalyzed reactions of 2,4,6-tri-*t*-butyl- and 2-methyl-4,6-di-*t*-butylbenzyl alcohols and chlorides. L. R. C. Barclay, H. R. Sonawane, and M. C. MacDonald, 281.
Sterically hindered aromatic compounds. IV. Solvolysis of *t*-butyl-, phenyl-, and trialkyl-benzyl chlorides in ethanol-water. Evidence for steric acceleration in 2,4,6-tri-*t*-butylbenzyl chloride. L. R. C. Barclay, H. R. Sonawane, and J. C. Hudson, 2318.
Sterically hindered aromatic compounds. V. Solvolysis of *p*-methyl, 2,4,6-trimethyl-, and 2,4,6-tri-*t*-butylbenzyl chloride. Effect of solvent and α -deuterium substitution. L. R. C. Barclay, J. R. Mercer, and J. C. Hudson, 3965.
- Barker, G. K.**
A convenient synthesis of monobromogermene. J. W. Anderson, G. K. Barker, J. E. Drake, and R. T. Hemmings, 1607.
- Barnes, D. J.**
Studies in solvolysis. Part V. Further investigations concerning the solvolysis of primary, secondary, and tertiary tribluoroacetates. D. J. Barnes, M. Cole, S. Lobo, J. G. Winter, and J. M. W. Scott, 2175.
- Barrett, P. F.**
The kinetics of the insertion reaction of tin(II) chloride with a mono-substituted derivative of cyclopentadienyliron dicarbonyl dimer. P. F. Barrett and W. J. Jacobs, 972.

- Barron, P. E.**
Base-catalyzed degradations of carbohydrates. II. β -Elimination reactions of 4-*O*-substituted methyl (methyl 2,3-di-*O*-methyl- β -D-glucopyranosid)uronates. G. O. Aspinall and P. E. Barron, 2203.
- Barton, D.**
The photolysis of benzoic acid in the vapor phase. F. Chau, C. Gibbons, and D. Barton, 2017.
- Barton, R. E.**
Circular dichroism of nitrate esters: a planar symmetry rule for the nitrate chromophore. R. E. Barton and L. D. Hayward, 1719.
- Basco, N.**
A transient intermediate in the bimolecular reaction of hydrated electrons. N. Basco, G. A. Kenney-Wallace, S. K. Vidyarthi, and D. C. Walker, 2059.
- Bassinnet, P.**
The electrochemical reduction of compounds with the $-\text{N}=\text{C}-\text{C}=\text{N}-$ group. III. *as*-Triazines. J. Pinson, J.-P. M'Packo, N. Vinot, J. Armand, and P. Bassinnet, 1581.
- Battistuzzi, R.**
Adducts of piperidine, piperazine methylpiperazine, and morpholine with bis(β -ketoenolates) of nickel(II). G. Marcotrigiano, R. Battistuzzi, and G. C. Pellacani, 2557.
- Beauchamp, A. L.**
Structure cristalline et moléculaire du thiocyanate mercurique. A. L. Beauchamp et D. Goutier, 977.
- Bebault, G. M.**
Synthesis of 4-*O*- β -D-glucopyranosyl-L-rhamnopyranose. G. M. Bebault and G. G. S. Dutton, 3373.
- Beckett, B. A.**
Total synthesis of (\pm)-ishwarane, a tetracyclic sesquiterpenoid. R. B. Kelly, J. Zamecnik, and B. A. Beckett, 3455.
- Begin, P. A.**
Réaction du sulfure de bore avec quelques composés difonctionnels. S. Jerumanis, P. A. Begin et D. Vu Cong, 1675.
- Beierbeck, H.**
Chemical shift. VII. The long-range shielding effects of the cyano group. J. W. ApSimon, H. Beierbeck, and D. K. Todd, 2351.
Conversion of nonlinear shift reagent plots to linear plots. J. W. ApSimon, H. Beierbeck, and A. Fruchier, 2725.
Automatic sorting of signals in shift reagent spectra. J. W. ApSimon, H. Beierbeck, and A. Fruchier, 2905.
- Belanger, G.**
L'effet d'anions sur l'oxydation anodique du méthanol. G. Belanger, 1891.
- Bell, R. A.**
 ^{13}C chemical shifts of highly substituted bicyclo[2.2.1]heptanes. N. H. Werstiuk, R. Taillefer, R. A. Bell, and B. G. Sayer, 2146.
Synthesis of lambertianic acid. R. A. Bell, M. B. Gravestock, and V. Y. Taguchi, 3749.
- Bell, T. N.**
The concentration dependence at 1 atm pressure and 300 °K of the binary diffusion coefficients of the systems helium-carbon dioxide, helium-nitrous oxide, and helium-sulfur hexafluoride. K. R. Harris, T. N. Bell, and P. J. Dunlop, 1874.
- Belleau, B.**
A convenient synthesis of L-(+)-muscarine. J. Whiting, Y.-K. Au-Young, and B. Belleau, 3322.
Electrochemical fission of vicinal diketals to orthoesters. R. Couture and B. Belleau, 3424.
- Belzile, R.**
Vibrational spectra of SiH_4 and SiD_4 - SiH_4 mixtures in the condensed states. R. P. Fournier, R. Savoie, N. Dinh The, R. Belzile, and A. Cabana, 35.
Erratum: Vibrational spectra of SiH_4 and SiD_4 - SiH_4 mixtures in the condensed states. R. P. Fournier, R. Savoie, N. D. The, R. Belzile, and A. Cabana, 1442.
- Bender, C. O.**
The photochemistry of 1-methoxy-1,4-dihydro-1,4-ethenoanthracene. C. O. Bender, J. L. M. Elder, A. J. Herbst, and L. E. Miller, 395.
- Benezra, C.**
The stereochemistry of the addition of two diazoalkane phosphonates to norbornene and norbornadiene: photolysis of the adducts. An entry into the dimethyl tricyclo[2.1.1.0 2,4]octyl phosphonate system. H. J. Callot and C. Benezra, 1078.
Réactions des phosphites triméthylique, triéthylique et triphénylique avec le cholestérol. C. Benezra, J.-L. Bravet et J. Riess, 2264.
Erratum: The stereochemistry of the addition of two diazoalkane phosphonates to norbornene and norbornadiene: photolysis of the adducts. An entry into the dimethyl tricyclo[2.1.1.0 2,4]octyl phosphonate system. H. J. Callot and C. Benezra, 3086.
- Benn, M. H.**
Attempts at the synthesis of the penicillin ring system by transannular reactions. M. H. Benn and R. E. Mitchell, 2195.
- Bennett, J. E.**
The self-reaction of *sec*-alkylperoxy radicals: a kinetic electron spin resonance study. J. A. Howard and J. E. Bennett, 2374.

- Benson, G. C.**
Vapor-liquid equilibria of cyclohexane-*cis*-decalin mixtures at 25 °C. T. Boublik and G. C. Benson, 1978.
- Benson, M.**
Examination of two theories for absorption of microwave and far infrared radiation by polar liquids. M. Benson, G. D. Martin, S. Walker, J. Warren, and R. Wilson, 2610.
- Berchiesi, G.**
Les équilibres solide-liquide dans des systèmes binaires formiate d'alcalino-terreux. G. Berchiesi, A. Cingolani, D. Leonesi et G. Piantoni, 1972.
- Bergman, J. J.**
A study of the barriers to rotation in some highly substituted diphenyl ethers. J. J. Bergman and W. D. Chandler, 353.
- Bernstein, H. J.**
Vapor phase Raman transitions in the CH₂ scissoring region and the ring puckering vibration of trimethylene oxide and some deuterated analogs. H. Wieser, M. Danyluk, W. Kiefer, and H. J. Bernstein, 2771.
- Berry, J. M.**
Synthesis of 6-*O*-(4-*O*-methyl- β -D-glucopyranosyl)-D-galactose. J. M. Berry and G. G. S. Dutton, 1424.
- Berryman, J. M.**
Some mixtures of carbon tetrachloride with several *n*-alkanes: enthalpies and energies of mixing. J. M. Berryman and E. L. Heric, 3799.
- Berse, C.**
The synthesis of 1-benzyl-2-carbomethoxy-3,3-dimethyl aziridine and its ring opening with excess acids. C. Berse and P. Bessette, 4061.
- Bertie, J. E.**
Erratum: Normal coordinate calculations of the vibrations of methylene cyclopropane-*h*₆ and -*d*₆. J. E. Bertie and S. Sunder, 765.
The infrared spectrum of ethylene oxide clathrate hydrate between 360 and 20 cm⁻¹, at 100 °K. J. E. Bertie and D. A. Othen, 3443.
- Bérubé, M.**
Peptides de l'acide djenkolique. II. Une nouvelle méthode de synthèse du glutathion oxydé. B. Marinier et M. Bérubé, 1633.
- Besette, P.**
The synthesis of 1-benzyl-2-carbomethoxy-3,3-dimethyl aziridine and its ring opening with excess acids. C. Berse and P. Bessette, 4061.
- Bhatnagar, O. N.**
Some thermodynamic properties of lithium chlorate in water and dioxane-water mixtures. A. N. Campbell and O. N. Bhatnagar, 1627.
- Bhattacharjee, S. S.**
The ¹³C Fourier transform spectrum of heparin. Evidence for a biose repeating sequence of residue. A. S. Perlin, N. M. K. N. Y. Kin, S. S. Bhattacharjee, and L. F. Johnson, 2437.
- Bicca de Alencastro, R.**
A low temperature infrared study of self-association in thiols. R. Bicca de Alencastro and C. Sandorfy, 3594.
- Bigam, G.**
An electron spin resonance examination of ferrocenylalkyl- and aryl ketyls. G. Bigam, J. Hooz, S. Linke, R. E. D. McClung, M. W. Mosher, and D. D. Tanner, 1825.
- Bindner, P. E.**
Primary yields and mechanisms in the radiolysis of N₂O from high intensity electron pulse irradiations of N₂O-O₂ mixtures. C. Willis, A. W. Boyd, and P. E. Bindner, 1557.
A positive-ion reaction mechanism for the radiation induced oxidation of carbon monoxide in the high dose rate radiolysis of CO-O₂ mixtures. C. Willis, A. W. Boyd, and P. E. Bindner, 3508.
- Birchall, T.**
Mössbauer and infrared spectra of octahedral complexes of iron(II) halides with amides and related ligands. T. Birchall and M. F. Morris, 201.
Mössbauer and infrared spectra of tetrahedral complexes of iron(II) halides with thioamides and related ligands. T. Birchall and M. F. Morris, 211.
- Bishop, C. T.**
Coupling of amino acids and amino sugars with cyanuric chloride (2,4,6-trichloro-s-triazine). A. S. Chaudhari and C. T. Bishop, 1987.
- Bisson, R.**
The oxygenation of 2-oxazolin-5-ones: a new synthesis of imides. R. Bisson, R. B. Yeats, and E. W. Warnhoff, 2851.
- Bissonnette, F.**
Etude de propriétés hydrodynamiques de solutions de polymères en mauvais solvants. N. Ho-Duc, H. Daoust et F. Bissonnette, 305.
- Bize, A. M.**
Etude des mouvements de molécules linéaires en phase liquide par analyse du profil des bandes d'absorption infrarouge. II. Bande γ_3 du sulfure de carbonyle. A. M. Bize, J. Soussen-Jacob, J. Vincent-Giesse, D. Legay et J. P. Perchard, 217.

- Black, S. A.**
Conformational studies on the 1,2:5,6-di-*O*-isopropylidene-D-hexoses. L. D. Hall, S. A. Black, K. N. Slessor, and A. S. Tracey, 1912.
- Bladek, R.**
Kinetics of pentadienyl cation cyclizations. R. Bladek and T. S. Sorensen, 2806.
- Bloor, E. G.**
The investigation of cation-anion interactions by ^{39}K nuclear magnetic resonance. E. G. Bloor and R. G. Kidd, 3926.
- Blount, J. F.**
Nitration studies on 2-isopropylimidazole. R. S. Glass, J. F. Blount, D. Butler, A. Perrotta, and E. P. Oliveto, 3472.
- Boal, D. H.**
Preparation, vibrational spectra, normal coordinate analysis, and structures of bis-pyridine and orthophenanthroline complexes of mixed halogenosilanes. D. H. Boal and G. A. Ozin, 2484.
- Bock, E.**
Electric moments and conformations of ortho-, meta-, and para-fluorobenzaldehyde. E. Bock and E. Tomchuk, 2890.
- Boivin, G.**
Etude cinétique des systèmes Cu(II)adénosine et Cu(II)*p*-ribose. G. Boivin et M. Zador, 3117.
- Bolton, G. L.**
Solvent structure effects and diffusion control in the reaction between solvated electrons and solvated protons in alcohols and water. K. N. Jha, G. L. Bolton, and G. R. Freeman, 3073.
- Borgese, J.**
A new synthesis of "Schöpf's base VI" and related 10*H*-isoindolo[2,3-*c*]benzazepines. S. Teitel, W. Klötzer, J. Borgese, and A. Brossi, 2022.
- Boublik, T.**
Vapor-liquid equilibria of cyclohexane-*cis*-decalin mixtures at 25 °C. T. Boublik and G. C. Benson, 1978.
- Bourdéron, C.**
Etude de l'association du 2,6-di-*ter*-butylparacrésol avec la cyclohexanone. C. Bourdéron, 1199.
Model calculations on the influence of mechanical and electrical anharmonicity on infrared intensities: relation to hydrogen bonding. T. Di Paolo, C. Bourdéron, and C. Sandorfy, 3161.
- Bourns, A. N.**
Isotope effect studies on elimination reactions. VIII. The mechanism of the 1,3-elimination reaction of 3-phenylpropyl-trimethylammonium iodide with amide ion in liquid ammonia. K. C. Westaway and A. N. Bourns, 2332.
- Bowden, K.**
Coordination compounds of indium. Part XV. The stability constants of some trifluoromethyl- β -diketonate complexes of indium(III). K. Bowden, G. M. Tanner, and D. G. Tuck, 2622.
- Boyd, A. W.**
Isotope effects and hydrogen yields in the radiolysis of H_2O - D_2O mixtures at very high dose rates. A. W. Boyd, C. Willis, and G. C. Lalor, 83.
Primary yields and mechanisms in the radiolysis of N_2O from high intensity electron pulse irradiations of N_2O - O_2 mixtures. C. Willis, A. W. Boyd, and P. E. Bindner, 1557.
A positive-ion reaction mechanism for the radiation induced oxidation of carbon monoxide in the high dose rate radiolysis of CO - O_2 mixtures. C. Willis, A. W. Boyd, and P. E. Bindner, 3508.
- Boyd, R. K.**
Rates of reaction of nickel(II) with terpyridine in dimethyl sulfoxide. P. A. Cock, C. E. Cottrell, and R. K. Boyd, 402.
A novel solution to the master equation for chemical reaction. R. K. Boyd, 3104.
- Boyer, F.**
Possible intermediates in the biosynthesis of porphyrins. J. M. Osgerby, J. Pluscec, Y. C. Kim, F. Boyer, N. Stojanac, H. D. Mah, and S. F. MacDonald, 2652.
- Boyes, A. P.**
The wetting properties of aqueous solutions of valeric acid on solid surfaces. A. B. Ponter and A. P. Boyes, 1613.
The relation between contact angle and drop size for water at its boiling point for a pressure range 50–760 Torr. A. B. Ponter and A. P. Boyes, 2419.
- Braekman, J.-C.**
Biosynthesis of lycopodine. Pelletierine as an obligatory intermediate. J.-C. Braekman, R. N. Gupta, D. B. MacLean, and I. D. Spenser, 2591.
- Braekman-Danheux, C.**
The structure of nupharolutine, and alkaloid of *Nuphar luteum*. J. T. Wróbel, A. Iwanow, C. Braekman-Danheux, T. I. Martin, and D. B. MacLean, 1831.
- Braslavsky, S.**
The photolysis of tetra(trifluoromethyl)thiophene vapor. H. A. Wiebe, S. Braslavsky, and J. Heicklen, 2721.
- Bravet, J.-L.**
Réactions des phosphites triméthylque, triéthylque et triphénylique avec le cholestérol. C. Benezra, J.-L. Bravet et J. Riess, 2264.

- Breckles, T. H.**
Mechanism of S_N1 reactions. The kinetics of the decomposition of aralkyl carbonates. J. M. Prokipcak and T. H. Breckles, 1770.
- Brelvi, S. W.**
Analysis of a first-order perturbation theory for the direct correlation function of dense fluids. S. W. Brelvi and J. P. O'Connell, 3135.
- Brewer, D. G.**
INDO-MO calculations and proton isotropic shifts of methyl-substituted pyridine ligands in Ni(II) complexes. M. S. Sun, F. Grein, and D. G. Brewer, 2626.
- Bridson, J. N.**
A regiospecific construction of α -haloketones by the reaction of enol borinates with *N*-bromo- and *N*-chlorosuccinimide. A convenient method for converting olefins into α -haloketones and esters. J. Hooz and J. N. Bridson, 2387.
- Brisse, F.**
Pyrochlores. VIII. Studies of some 2-5 pyrochlores and related compounds and minerals. F. Brisse, D. J. Stewart, V. Seidl, and O. Knop, 3648.
- Broadbent, A. D.**
Photolysis of aqueous solutions of 9,10-anthraquinone-2-sulfonate. Part I. Dependence of product yields on reaction conditions. A. D. Broadbent and R. P. Newton, 381.
- Brochu, M.**
Microwave spectrum, dipole moment, and intramolecular hydrogen bond of 2-methoxyethanol. P. Buckley and M. Brochu, 1149.
- Brossi, A.**
A new synthesis of "Schöpf's base VI" and related 10*H*-isoindolo[2,3-*c*]benzazepines. S. Teitel, W. Klötzer, J. Borgese, and A. Brossi, 2022.
- Brouwer, H.**
 ^{13}C nuclear magnetic resonance studies. XVI. ^{13}C spectra of some substituted acrylic acids and their esters. A correlation of olefinic shieldings in α,β -unsaturated carbonyl systems. H. Brouwer and J. B. Stothers, 601.
 ^{13}C nuclear magnetic resonance studies. XX. ^{13}C shieldings of several allyl alcohols. Geometric dependence of ^{13}C shieldings. H. Brouwer and J. B. Stothers, 1361.
- Brown, A.**
The barrier to rotation in cyclopropylmethyl cations. A. Brown and G. H. Schmid, 2432.
- Brown, J. E.**
Application of cusp-satisfying orbitals to some two-electron systems. J. E. Brown and D. P. Chong, 2887.
- Brown, R. J. C.**
Temperature and pressure dependence of ^{209}Bi nuclear quadrupole resonance in BiCl_3 . G. C. Gillies and R. J. C. Brown, 2586.
- Brown, R. K.**
The influence of the 2-alkoxy group and of C-5 substituents on the direction of reductive cleavage of 2-alkoxytetrahydrofurans by AlH_2Cl in ether solution. P. C. Loewen, L. P. Makhubu, and R. K. Brown, 1502.
2-Aryloxytetrahydrofurans. Their reductive cleavage by ether solutions of AlH_2Cl and their cleavage and rearrangement by ether solutions of AlCl_3 . P. C. Loewen and R. K. Brown, 3639.
- Brownlee, B. G.**
A model compound for anhydriyanodol. B. G. Brownlee, P.-t. Ho, and K. Wiesner, 4013.
- Brownstein, M.**
 ^{19}F nuclear magnetic resonance study of the difluorochlorine(III) cation, ClF_2^+ . M. Brownstein and J. Shamir, 3409.
- Brownstein, S.**
Hindered rotation in styryl anions. S. Brownstein and D. J. Worsfold, 1246.
- Brusset, H.**
Etude des oxynitrates de plomb. I. Synthèse des oxynitrates de plomb hydratés et de l'oxyde de plomb anhydre ou hydraté. H. Brusset, J. J. P. Martin, C. Martin-Lefevre, Y. Repelin, E. Husson et B. Despagne, 184.
Chaleurs de mélange du système ethyl-3 pentanol-3 tetrachlorure de carbone. H. Brusset, M. Desgranges et J. C. Lecoq, 3207.
- Buccini, J.**
Approaches to the synthesis of triterpenoids. II. Some tetracyclic precursors suitable for conversion into pentacyclic triterpenoids. J. W. ApSimon, P. Baker, J. Buccini, J. W. Hooper, and S. Macaulay, 1944.
- Buchanan, G. W.**
Conformational studies of substituted trimethylene sulfites by proton magnetic resonance. G. Wood, G. W. Buchanan, and M. H. Miskow, 521.
The conformational enthalpy, entropy, and free energy of the formyl group determined by low temperature proton magnetic resonance. G. W. Buchanan and A. R. McCarville, 1965.
- Buchshriber, J. M.**
The reaction of some isothiazolium salts with sulfur in pyridine. G. E. Bachers, D. M. McKinnon, and J. M. Buchshriber, 2568.

- Buckley, P.**
Microwave spectrum, dipole moment, and intramolecular hydrogen bond of 2-methoxyethanol. P. Buckley and M. Brochu, 1149.
- Budd, D.**
Reactions of 1,2,5-triphenylphosphine and its oxide, sulfide, and selenide with some transition metal halides. D. Budd, R. Chuchman, D. G. Holah, A. N. Hughes, and B. C. Hui, 1008.
- Bunbury, D. L.**
The photolysis of 4-hydroxybenzil and the effect of triethylamine on the photolysis of benzil and 4-hydroxybenzil. D. L. Bunbury and T. M. Chan, 2499.
- Bunce, N. J.**
Free radical bromination of saturated hydrocarbons using bromine and mercuric oxide. N. J. Bunce, 3109.
- Buncel, E.**
An aromatic amine - 1,3,5-trinitrobenzene σ -complex. E. Buncel and J. G. K. Webb, 129.
Meisenheimer complex formation between 1,3,5-trinitrobenzene and hydroxide ion. Equilibrium constants for the dimethylformamide-water solvent system. E. A. Symons and E. Buncel, 1729.
Bond scission in sulfur compounds. V. A kinetic study of sulfur-oxygen and sulfur-chlorine bond scission in the methanolysis of *p*-nitrophenyl chlorosulfate. E. Buncel and A. Raoult, 1907.
- Bunting, J. W.**
Quaternary nitrogen heterocycles. I. Equilibrium and spectral data for pseudobase formation by the *N*-methyl cations of diazanaphthalenes. J. W. Bunting and W. G. Meathrel, 917.
- Burchill, C. E.**
Radiation-induced oxidation of 2-propanol by nitrous oxide in alkaline aqueous solution. C. E. Burchill and G. P. Wollner, 1751.
- Burnell, E. E.**
A nuclear magnetic resonance study of norbornadiene partially oriented in a nematic phase. E. E. Burnell and P. Diehl, 3566.
- Burton, R.**
A selective determination of the proton nuclear relaxation times of the alkaloid vindoline. R. Burton, C. W. M. Grant, and L. D. Hall, 497.
- Busch, D. H.**
Two diastereomeric oxalatobis(S-butane-1,3-diamine) cobalt(III) complexes. M. Parris, L. J. DeHayes, and D. H. Busch, 3569.
- Bushnell, G. W.**
An X-ray structure determination of the twinned crystals of dinitrato-2,2'-dipyridylsilver(II). G. W. Bushnell and M. A. Khan, 315.
Hydroxy complexes of platinum(II) and palladium(II). G. W. Bushnell, K. R. Dixon, R. G. Hunter, and J. J. McFarland, 3694.
The crystal structure of caesium oxotetrafluorovanadate(V). G. W. Bushnell and K. C. Moss, 3700.
- Butler, D.**
Nitration studies on 2-isopropylimidazole. R. S. Glass, J. F. Blount, D. Butler, A. Perrotta, and E. P. Oliveto, 3472.
- Butler, D. N.**
Chemistry of proximal π -bond systems. Part I. Synthesis of vicinal exocyclic dimethylene hydrocarbons. D. N. Butler and R. A. Snow, 795.
Metal-ammonia reduction. Part I. The reduction of α,ω -diaryllkanes and triphenylmethanes. D. N. Butler and R. Milburn, 1249.
- Butler, R. N.**
Nuclear magnetic resonance spectra of methyl substituted 6-aryl[1,2,4]triazolo[4,3-*d*]tetrazoles. R. N. Butler, 1786.
- Buu, N. T.**
Photolysis and thermolysis of ethyl diazomalonanilate and of 5-hydroxy-1,4-diphenyl-1,2,3-triazole in various alcohols. N. T. Buu and J. T. Edward, 3719.
Photolysis of ethyl diazomalonanilate in acetonitrile. N. T. Buu and J. T. Edward, 3730.
- Cabana, A.**
Vibrational spectra of SiH₄ and SiD₄-SiH₄ mixtures in the condensed states. R. P. Fournier, R. Savoie, N. D. The, R. Belzile, and A. Cabana, 35.
Erratum: Vibrational spectra of SiH₄ and SiD₄-SiH₄ mixtures in the condensed states. R. P. Fournier, R. Savoie, N. D. The, R. Belzile, and A. Cabana, 1442.
Infrared spectra and structure of solid CH₄ and CD₄ in phases I and II. C. Chapados and A. Cabana, 3521.
- Callot, H. J.**
The stereochemistry of the addition of two diazoalkane phosphonates to norbornene and norbornadiene; photolysis of the adducts. An entry into the dimethyl tricyclo[2.1.1.0^{2,4}]octyl phosphonate system. H. J. Callot and C. Benezra, 1078.
Erratum: The stereochemistry of the addition of two diazoalkane phosphonates to norbornene and norbornadiene; photolysis of the adducts. An entry into the dimethyl tricyclo[2.1.1.0^{2,4}]octyl phosphonate system. H. J. Callot and C. Benezra, 3086.

- Calvo, C.**
The structure of $\text{Na}_4\text{P}_2\text{O}_7$ at 22 °C. K. Y. Leung and C. Calvo, 2519.
The structure and physical properties of μ -oxo-bis[oxo-trichloro(*O*-perrhenylchloride)rhenium(VI)], and the non-existence of β - ReOCl_3 . C. Calvo, P. W. Fraiss, and C. J. L. Lock, 3607.
Crystal structure and electron spin resonance of Mn^{2+} in MgV_2O_6 . H. N. Ng and C. Calvo, 3619.
Crystal structure of a new form of $\text{Cu}_3\text{V}_2\text{O}_8$. R. D. Shannon and C. Calvo, 3944.
- Cameron, A. M.**
Thermolysis of Δ^3 -1,3,4-oxadiazolin-2-ones. S. L. Lee, A. M. Cameron, and J. Warkentin, 2326.
- Cameron, R.**
The basicity of aliphatic ethers. D. G. Lee and R. Cameron, 445.
- Campbell, A. B.**
Adsorption of Co^{2+} by oxides from aqueous solution. P. H. Tewari, A. B. Campbell, and W. Lee, 1642.
- Campbell, A. N.**
Phase equilibria in the systems acetone-methanol, acetone-cyclohexane, methanol-cyclohexane, and acetone-methanol-cyclohexane. A. N. Campbell and S. C. Anand, 479.
Densities, excess volumes, surface tensions, viscosities, and dielectric constants, of the systems: methanol-cyclohexane, acetone-methanol, acetone-cyclohexane, and methanol-cyclohexane-acetone. A. N. Campbell and S. C. Anand, 1109.
Some thermodynamic properties of lithium chlorate in water and dioxane-water mixtures. A. N. Campbell and O. N. Bhatnagar, 1627.
Phase diagrams of sodium chloride and of potassium chloride in water-dioxane. A. N. Campbell and S. Y. Lam, 3388.
- Campbell, J. A.**
Synthesis and isomerization of adducts of azodicarbonyl compounds and cyclopentadiene. J. A. Campbell, D. Mackay, and T. D. Sauer, 371.
- Campbell, J. R.**
Measurements of deuterium chemical shifts by ^1H - ^2H INDOR spectroscopy. J. R. Campbell, L. D. Hall, and P. R. Steiner, 504.
Applications of lanthanide shift reagents to the identification of ^{13}C resonances. I. Armitage, J. R. Campbell, and L. D. Hall, 2139.
- Canham, G. W. R.**
Isotopic studies of the metal-ligand bond. Part I. Further spectroscopic studies of copper ethylenediamine complexes: copper-nitrogen vibrations. G. W. R. Canham and A. B. P. Lever, 3866.
- Cappelli, F. P.**
The preparation and acetolyses of 5-deuteriated *exo*-2-norbornyl-*p*-bromobenzenesulfonates. N. H. Werstiuk, R. R. MacDonald, R. W. Ouwehand, W. L. Chan, F. P. Cappelli, J. G. Ballard, R. E. Young, R. E. Massey, G. Timmins, I. Goodwin, A. Walling, and Y. Teruta, 618.
Acid-catalyzed ring opening of halo-nortricyclanes. F. P. Cappelli, G. Timmins, and N. H. Werstiuk, 2163.
- Carey, L. R.**
Mechanistic information on the equations of complexes of the pentaamminecobalt(III) series from kinetic studies at high pressures. W. E. Jones, L. R. Carey, and T. W. Swaddle, 2739.
- Carles, J.**
Etude des oxyphosphoranes en tant qu'intermédiaires lors de la réduction de l'ozonide du styrène par les phosphites. J. Carles et S. Fliszár, 2552.
- Carr, B.**
A curious synthesis of some μ_4 -oxo-hexa- μ -halotetracopper(II) complexes. B. Carr and J. F. Harrod, 2792.
- Carthy, B. J.**
The synthesis of some α -cyclopropylcarbonyl glycopyranosides. B. Fraser-Reid and B. J. Carthy, 2928.
- Casy, A. F.**
Synthesis and stereochemistry of diastereoisomeric 1,3-dimethylpiperidin-4-ols and related compounds. A. F. Casy and W. K. Jeffrey, 803.
Stereochemistry of 3-methyl-4-phenylpiperidines derived from corresponding 4-phenyl-4-piperidinols. K. M. J. McErlane and A. F. Casy, 2149.
Synthesis and stereochemistry of some diastereoisomeric 2-amino-4-*t*-butylcyclohexanols and related compounds. A. F. Casy, E. S. C. Wu, and B. D. Whelton, 3998.
- Cerfontain, H.**
Sulfonation and isomerization of some halogenobenzenesulfonic acids. H. Cerfontain, A. Koeberg-Telder, and W. A. Z. Voorspuys, 1574.
Kinetics of sulfonation of phenylmethanesulfonic acid. Z. R. H. Nienhuis, W. J. Spillane, and H. Cerfontain, 1591.
- Chadwick, D.**
Photoelectron spectra of phosgene and thiophosgene. D. Chadwick, 737.
Photoelectron spectra of some bromoethylenes and 2-bromopropene. D. Chadwick, D. C. Frost, A. Katrib, C. A. McDowell, and R. A. N. McLean, 2642.
- Chakrabarti, C. L.**
Kinetics of displacement of Ni(II) by Cu(II) in bis(dithiocarbamate)nickel(II). R. R. Scharfe, V. S. Sastri, and C. L. Chakrabarti, 3384.

- Chan, S. C.**
Primary processes in the vacuum ultraviolet photolysis of ethyl fluoride at 147 nm. S. C. Chan, Y. Inel, and E. Tschuikow-Roux, 1443.
- Chan, T. M.**
The photolysis of 4-hydroxybenzil and the effect of triethylamine on the photolysis of benzil and 4-hydroxybenzil. D. L. Bunbury and T. M. Chan, 2499.
- Chan, W. L.**
The preparation and acetolyses of 5-deuteriated *exo*-2-norbornyl-*p*-bromobenzenesulfonates. N. H. Werstiuk, R. R. MacDonald, R. W. Ouwehand, W. L. Chan, F. P. Cappelli, J. G. Ballard, R. E. Young, R. E. Massey, G. Timmins, I. Goodwin, A. Walling, and Y. Teruta, 618.
- Chandler, W. D.**
A study of the barriers to rotation in some highly substituted diphenyl ethers. J. J. Bergman and W. D. Chandler, 353.
Conformations of bridged diphenyls. I. Crystal structure of 2-(3'-methyl-4'-nitrophenoxy)-1,3-diisopropylbenzene. E. A. H. Griffith, W. D. Chandler, and B. E. Robertson, 2963.
Conformations of bridged diphenyls. II. Crystal structure of 2-(2',4'-dinitrophenoxy)-1,3,5-tri-*t*-butylbenzene. E. A. H. Griffith, W. D. Chandler, and B. E. Robertson, 2972.
Conformations of bridged diphenyls. III. Crystal structure of 2-(2'-carbomethoxy-4'-nitrophenoxy)-1,3,5-trichlorobenzene. E. A. H. Griffith, W. D. Chandler, and B. E. Robertson, 2979.
- Chang, I. S.**
Studies on fluorinated vinylic and aromatic alcohols and esters. I. S. Chang, J. T. Price, A. J. Tomlinson, and C. J. Willis, 512.
- Chapados, C.**
Infrared spectra and structure of solid CH₄ and CD₄ in phases I and II. C. Chapados and A. Cabana, 3521.
- Chapman, O. L.**
Stereochemistry of the cycloaddition of singlet excited β -substituted styrenes to olefins. O. L. Chapman, R. D. Lura, R. M. Owens, E. D. Plank, S. C. Shim, D. R. Arnold, and L. B. Gillis, 1984.
- Chau, F.**
The photolysis of benzoic acid in the vapor phase. F. Chau, C. Gibbons, and D. Barton, 2017.
- Chaudhari, A. S.**
Coupling of amino acids and amino sugars with cyanuric chloride (2,4,6-trichloro-*s*-triazine). A. S. Chaudhari and C. T. Bishop, 1987.
- Chelack, W. S.**
Silver plated bimolecular lipid membranes. A. Petkau and W. S. Chelack, 1448.
- Chen, C. J.**
Kinetic study of the pyrolysis of formaldehyde. C. J. Chen and D. J. McKenney, 992.
- Chen, S. C.**
Photoreactions of nitroso compounds in solution. XXI. Stereochemical course of photoaddition of nitrosamines to some cyclic olefins and conformational isomers generated by A^{1,3}-interaction. Y. L. Chow, S. C. Chen, K. S. Pillay, and R. A. Perry, 1051.
- Cheng, P.-T.**
The crystal and molecular structure of bis(triphenylphosphine)(ethylene)platinum, (PPh₃)₂PtC₂H₄. P.-T. Cheng and S. C. Nyburg, 912.
- Chenier, J. H. B.**
Absolute rate constants for hydrocarbon autoxidation. XXI. Activation energies for propagation and the correlation of propagation rate constants with carbon-hydrogen bond strengths. S. Korcek, J. H. B. Chenier, J. A. Howard, and K. U. Ingold, 2285.
- Cheriyian, U. O.**
The chromyl chloride oxidation of α -pinene. F. W. Bachelor and U. O. Cheriyian, 4022.
- Cheyne, B. M.**
The ¹²⁵Te Mössbauer absorption spectra of the thiourea, ethylenethiourea, and tetramethylthiourea derivatives of tellurium(II) and tellurium(IV). B. M. Cheyne, C. H. W. Jones, and P. Vasudev, 3677.
- Chia, L. S.**
The preparation of 1,2-dimethylarsinohexafluorocyclopentene, 1,2-dimethylarsinooctafluorocyclohexene, and related mixed ligands. L. S. Chia and W. R. Cullen, 1421.
The preparation of iron carbonyl complexes of fluorocarbon-bridged ligands. L. S. Chia, W. R. Cullen, and D. A. Harbourne, 2182.
- Chiang, S. S. M.**
Terpolymerization of methacrylonitrile, styrene, and α -methylstyrene. A. Rudin, S. S. M. Chiang, H. K. Johnston, and P. D. Paulin, 1757.
- Chinh, N.**
Substituent effects in dye-sensitized photooxidation reactions of furans. R. H. Young, R. L. Martin, N. Chinh, C. Mallon, and R. H. Kayser, 932.

- Chip, G. K.**
Aromatic halogenation with titanium(IV) chloride in presence of peroxytrifluoroacetic acid. G. K. Chip and J. S. Grossert, 1233.
- Chivers, T.**
The reactions of *N,N'*-dimethylethylenediamine with cyclic phosphonitric halides. T. Chivers and R. Hedgeland, 1017.
- Chong, D. P.**
Application of cusp-satisfying orbitals to some two-electron systems. J. E. Brown and D. P. Chong, 2887.
- Chow, Y. L.**
Photoreactions of nitroso compounds in solution. XX. Photoreduction, photoelimination, and photoaddition of nitrosamines. Y. L. Chow, M. P. Lau, R. A. Perry, and J. N. S. Tam, 1044.
Photoreactions of nitroso compounds in solution. XXI. Stereochemical course of photoaddition of nitrosamines to some cyclic olefins and conformational isomers generated by $A^{1,3}$ -interaction. Y. L. Chow, S. C. Chen, K. S. Pillay, and R. A. Perry, 1051.
Photoreactions of nitroso compounds in solution. XXII. Stereochemical consequences of the photoaddition of *N*-nitrosopiperidine to conjugated acyclic dienes: a nuclear magnetic resonance study of enone oximes. Y. L. Chow, C. J. Colón, H. H. Quon, and T. Mojelsky, 1065.
The triplet state of ketones in solution: quenching of triplet acetone by amines. R. W. Yip, R. O. Loutfy, Y. L. Chow, and L. K. Magdzinski, 3426.
- Chu, D. T.**
The alkaloids of *Ormosia semicastrata*: (–)-ormosanine, (±)-piptanthine, (–)-18-epiormosanine, and (–)-ormocastrine. S. McLean, M. L. Roy, H.-J. Liu, and D. T. Chu, 1639.
- Chu, V.**
A new synthesis of 6-hydroxydopamine. P. A. Wehrli, F. Pigott, and V. Chu, 3075.
- Chuchman, R.**
Reactions of 1,2,5-triphenylphosphole and its oxide, sulfide, and selenide with some transition metal halides. D. Budd, R. Chuchman, D. G. Holah, A. N. Hughes, and B. C. Hui, 1008.
- Chung, C. Y.-J.**
The acid-catalyzed isomerization of the adducts of azodiacyls with cyclopentadiene and 1,3-cyclohexadiene. C. Y.-J. Chung, D. Mackay, and T. D. Sauer, 1568.
The effect of bridge size on the sigmatropic rearrangement of 2,3-dibenzoyl-2,3-diazabicyclo[2.2.0]alk-5-enes. C. Y.-J. Chung, D. Mackay, and T. D. Sauer, 3315.
- Cingolani, A.**
Les équilibres solide-liquide dans des systèmes binaires formiate d'alcalin-formiate d'alcalino-terreux. G. Berchiesi, A. Cingolani, D. Leonesi et G. Piantoni, 1972.
- Clark, F. R. S.**
Addition of ICl to norbornene. The preparation and photochemical isomerization of *syn*-7-iodonorbornene. N. H. Werstiuk, I. Vancas, J. Warkentin, and F. R. S. Clark, 291.
- Clarke, E. C. W.**
Evaluation of unbonded O—H groups for HDO in liquid D₂O from infrared absorptivity measurements. E. C. W. Clarke and D. N. Glew, 1655.
- Clark-Monks, C.**
n-Butylamine adsorption onto amorphous silica. C. Clark-Monks and B. Ellis, 907.
- Cleland, J. H.**
The oxidation of organic compounds by sodium ruthenate. D. G. Lee, D. T. Hall, and J. H. Cleland, 3741.
- Clement, J. R.**
Pulse radiolysis of aqueous papain. J. R. Clement, D. A. Armstrong, N. V. Klassen, and H. A. Gillis, 2833.
- Clipsham, R. M.**
Chlorocuprate(II) and chlorocobaltate(II) salts of the aminodiphenylphosphonitride-amino diphenylphosphonium ion. R. M. Clipsham and M. A. Whitehead, 75.
- Cocivera, M.**
Photooxidation and decarboxylation of tyrosine studied by E.P.R. and C.I.D.N.P. techniques. M. Tomkiewicz, R. D. McAlpine, and M. Cocivera, 3849.
- Cock, P. A.**
Rates of reaction of nickel(II) with terpyridine in dimethyl sulfoxide. P. A. Cock, C. E. Cottrell, and R. K. Boyd, 402.
- Cole, M.**
Studies in solvolysis. Part V. Further investigations concerning the solvolysis of primary, secondary, and tertiary trifluoroacetates. D. J. Barnes, M. Cole, S. Lobo, J. G. Winter, and J. M. W. Scott, 2175.
- Colebrook, L. D.**
Hydrazine derivatives. I. Transcarbamylation reaction. J. A. Lenoir, L. D. Colebrook, and D. F. Williams, 2661.
- Collin, G. J.**
The far U.V. photolysis of alkenes: the use of hydrogen sulfide as a radical scavenger. G. J. Collin, P. M. Perrin, and C. M. Gaucher, 2391.
Photoisomerization of 2-alkenes in the presence of hydrogen sulfide. G. J. Collin and P. M. Perrin, 2400.
Photolyse dans l'ultraviolet à vide du *cis*- et du *trans*-butène-2. G. J. Collin et P. M. Perrin, 2823.

- Colón, C. J.**
Photoreactions of nitroso compounds in solution. XXII. Stereochemical consequences of the photoaddition of *N*-nitrosopiperidine to conjugated acyclic dienes: a nuclear magnetic resonance study of enone oximes. Y. L. Chow, C. J. Colón, H. H. Quon, and T. Mojelsky, 1065.
- Colter, A. K.**
The effect of pressure on the rate of acetolysis of a charge-transfer complex. R. K. Williams, J. J. Loveday, and A. K. Colter, 1303.
- Condit, D. A.**
Oriented polycrystal formation of halogen containing organic molecules on alkali halide windows and their usefulness in vibrational spectroscopic studies. J. E. Katon, D. Sinha, M. G. Griffin, and D. A. Condit, 3255.
- Congdon, W. I.**
Thiohydantoin. X. Kinetic studies of the acid hydrolysis of 1-acyl-2-thiohydantoin. W. I. Congdon and J. T. Edward, 3767.
Thiohydantoin. XI. Kinetic studies of the alkaline hydrolysis of 1-acyl-2-thiohydantoin. W. I. Congdon and J. T. Edward, 3780.
Thiohydantoin. XII. Secondary deuterium isotope effects in the acid- and base-catalyzed hydrolysis of 1-acetyl-5,5-dimethyl-2-thiohydantoin. W. I. Congdon and J. T. Edward, 3921.
- Cook, W. G.**
Heterogeneous interactions of methylamines on porous adsorbents. Part I. The adsorption of monomethylamine on silica gels and silica-alumina. W. G. Cook and R. A. Ross, 1666.
Heterogeneous interactions of methylamines on porous adsorbents. Part II. Interactions on silica-alumina and silica gel surfaces of di- and tri-methylamine in the region of their boiling points. W. G. Cook and R. A. Ross, 2451.
- Côté, P. A.**
Constantes de stabilité de cyano-complexes d'argent et produit de solubilité de AgCN. A. O. Gübeli et P. A. Côté, 1144.
- Cottrell, C. E.**
Rates of reaction of nickel(II) with terpyridine in dimethyl sulfoxide. P. A. Cock, C. E. Cottrell, and R. K. Boyd, 402.
- Courrier, W. D.**
Studies of β -diketone complexes of rhenium I. Tris(pentane-2,4-dionato)rhenium(III) and tris(1,1,1,5,5,5-hexafluoropentane-2,4-dionato)rhenium(III). W. D. Courrier, W. Forster, C. J. L. Lock, and G. Turner, 8.
Studies of β -diketone complexes of rhenium. Part II. Physical studies of dihalobis(pentane-2,4-dionato)rhenium(IV) compounds. W. D. Courrier, C. J. L. Lock, and G. Turner, 1797.
- Couture, R.**
Electrochemical fission of vicinal diketals to orthoesters. R. Couture and B. Belleau, 3424.
- Couturier, J.**
Spectroscopie de masse des *gem*-diesters cycliques. Fragment anhydride. K. Jankowski, J. Couturier et J. Y. Daigle, 1535.
Spectroscopie de masse des *gem*-diesters épimères. K. Jankowski, J. Couturier et R. Tower, 1539.
- Cox, R. A.**
Kinetics of bromination of acetone, bromoacetone, and 1,1-dibromoacetone. R. A. Cox and J. Warkentin, 3233.
Hydrogen isotope exchange in 2-butanone. Further measurements and some comments. R. A. Cox, J. W. Thorpe, and J. Warkentin, 3239.
Effects of bromine substituents on rates of acetate-promoted enolization of ketones. R. A. Cox and J. Warkentin, 3242.
- Crawford, R. J.**
The racemization and geometrical isomerization of oxiranes. H. H. J. MacDonald and R. J. Crawford, 428.
The racemization of *trans*-1,2-divinylcyclopropane. M. Arai and R. J. Crawford, 2158.
- Cree, G. M.**
Erratum: Stereochemistry of dehydrogenation by D-galactose oxidase. A. Maradufu, G. M. Cree, and A. S. Perlin, 768.
- Crews, E. W.**
Circular dichroism of *R*-1,2-propanediamine complexes of copper(II). R. A. Haines and E. W. Crews, 3390.
- Crossley, J.**
Dielectric and association behavior of 1-propanol, 2-propen-1-ol, and 2-propyn-1-ol in non-polar solvents. G. E. Rajala and J. Crossley, 99.
Dielectric relaxation of bromoalkanes in cyclohexane solution. S. P. Tay and J. Crossley, 2031.
- Csizmadia, V. M.**
The addition of 4-chloro- and 2,4-dinitrobenzenesulfonyl chloride to *cis*- and *trans*-1-phenylpropene. G. H. Schmid, V. M. Cszizmadia, V. J. Nowlan, and D. G. Garratt, 2457.
The effect of temperature and solvent upon the addition of 4-chlorobenzenesulfonyl chloride to *cis*- and *trans*-1-phenylpropene. G. H. Schmid and V. M. Cszizmadia, 2465.
- Cullen, W. R.**
The preparation of 1,2-dimethylarsinoheptafluorocyclopentene, 1,2-dimethylarsinooctafluorocyclohexene, and related mixed ligands. L. S. Chia and W. R. Cullen, 1421.
The preparation of iron carbonyl complexes of fluorocarbon-bridged ligands. L. S. Chia, W. R. Cullen, and D. A. Harbourn, 2182.

- Cundasawmy, N. E.**
The synthesis of (\pm)-ochrobirine. A new route to the spirobenzylisoquinoline system. N. E. Cundasawmy and D. B. MacLean, 3028.
- Cunningham, A. J.**
Kinetics and rate constants of reactions leading to hydration of NO_2^- and NO_3^- in gaseous oxygen, argon, and helium containing traces of water. J. D. Payzant, A. J. Cunningham, and P. Kebarle, 2230.
- Curtis, K. E.**
Equilibrium constants for 2,3-dihydroxypyridine and its complex with iron(III) in 1M hydrochloric acid. K. E. Curtis and G. F. Atkinson, 1649.
- Cutshall, T. W.**
Concerning the discrepancies in the reported infrared spectra of dibenzo(*a,e*)cyclooctatetraene. T. W. Cutshall and P. W. Rabideau, 2364.
- Cvetanović, R. J.**
Relative rate of reaction of $\text{O}(^1\text{D}_2)$ with N_2O . G. Paraskevopoulos, V. B. Symonds, and R. J. Cvetanović, 1838.
- Cyr, N.**
Carbon-13 chemical shifts of methylcyclohexanes, cyclohexanols, α - and β -D-glucose and their relation to carbon electron densities from the extended Huckel and Del Re theories. N. Cyr, A. S. Perlin, and M. A. Whitehead, 814.
- Daigle, J.-Y.**
Erratum: Isomérisation des époxydes. K. Jankowski et J.-Y. Daigle, 455.
Spectroscopie de masse des *gem*-diesters cycliques. Fragment anhydride. K. Jankowski, J. Couturier et J.-Y. Daigle, 1535.
- Dalziel, J. R.**
The synthesis and structural studies of some dialkyltin(IV) salts of strong monobasic acids. T. H. Tan, J. R. Dalziel, P. A. Yeats, J. R. Sams, R. C. Thompson, and F. Aubke, 1843.
- Danks, L. J.**
Organic sulfur mechanisms. 12. Reaction of sulfenes with triphenylphosphine. J. F. King, E. G. Lewars, and L. J. Danks, 866.
- Danyluk, M.**
Infrared band progressions in the CH_2 scissoring region and the ring puckering vibration of trimethylene oxide and some deuterated analogs. H. Wieser and M. Danyluk, 2761.
Vapor phase Raman transitions in the CH_2 scissoring region and the ring puckering vibration of trimethylene oxide and some deuterated analogs. H. Wieser, M. Danyluk, W. Kiefer, and H. J. Bernstein, 2771.
- Daoust, H.**
Etude de propriétés hydrodynamiques de solutions de polymères en mauvais solvants. N. Ho-Duc, H. Daoust et F. Bissonnette, 305.
- Dave, V.**
Hindered rotation in an *o*-substituted acetophenone. V. Dave and E. W. Warnhoff, 2470.
A new indoline rearrangement. V. Dave, J. B. Stothers, and E. W. Warnhoff, 2475.
Reaction of *N*-acetyl-2,3-diphenylindole with nitric acid. V. Dave and E. W. Warnhoff, 3392.
Reaction of 2,3-diphenylindole with permanganate. Rearrangements of *N,N'*-dimers. V. Dave, 3397.
- Davidson, D. W.**
The hydrate of hexafluorophosphoric acid. D. W. Davidson and S. K. Garg, 3515.
- Davies, B. W.**
An intermediate in the conversion of an acetylene to a vinyl derivative: the crystal and molecular structure of *trans*-chloromethylbis (trimethylarsine) platinum(II) hexafluorobut-2-yne. B. W. Davies, R. J. Puddephatt, and N. C. Payne, 2276.
- Davies, M.**
Cycloaddition and related reactions of some unsaturated phosphines with dimethyl acetylenedicarboxylate. M. Davies, A. N. Hughes, and S. W. S. Jafry, 3625.
- Davis, C. S.**
Effect of pressure on the solvolysis of dimethyl-*t*-butyl sulfonium iodide in ethanol-water mixtures. C. S. Davis and J. B. Hyne, 2270.
- Dearing, C. A.**
A nuclear magnetic resonance study of some 4-X-substituted-2,6-dinitroanisoles and related Meisenheimer 1,3- and 1,1-complexes. M. P. Simonnin, M. J. Lecourt, F. Terrier, and C. A. Dearing, 3558.
- de Champlain, P.**
Flash thermolysis: quinones. P. de Champlain and P. de Mayo, 270.
- DeHayes, L. J.**
Two diastereometric oxalatobis(S-butane-1,3-diamine) cobalt(III) complexes. M. Parris, L. J. DeHayes, and D. H. Busch, 3569.
- de Jong, I. G.**
Nuclear recoil reactions in organomanganese compounds. VI. $\text{IMn}(\text{CO})_5$ and $\text{BrMn}(\text{CO})_5$. I. G. de Jong and D. R. Wiles, 961.

Deljac, A.

A synthetic study in the tricyclovetivene series. A. Deljac, W. D. MacKay, C. S. J. Pan, K. J. Wiesner, and K. Wiesner, 726.
Erratum: A synthetic study in the tricyclovetivene series. A. Deljac, W. D. MacKay, C. S. J. Pan, K. J. Wiesner, and K. Wiesner, 3933.

de Mayo, P.

Flash thermolysis: quinones. P. de Champlain and P. de Mayo, 270.
The nature of the tricyclic dimer formed from acetylacetone and hydrazine: an application of ^{13}C nuclear magnetic resonance. P. de Mayo, J. B. Stothers, and M. C. Usselman, 612.
Primary bond formation in the addition of cyclopentenone to chloroethylenes. R. O. Loutfy and P. de Mayo, 3465.
The photocyclization of aromatic thioketones. R. Lapouyade and P. de Mayo, 4068.

Demerson, C.

The synthesis of delphinine: a stereoselective total synthesis of an optically active advanced relay compound. K. Wiesner, E. W. K. Jay, T. Y. R. Tsai, C. Demerson, L. Jay, T. Kanno, J. Křepinský, A. Vilim, and C. S. Wu, 1925.

Denning, K. F.

Conductivity and viscosity of the tetrabutylammonium bromide-carbon tetrachloride system. K. F. Denning and J. A. Plambeck, 1600.

Desgranges, M.

Chaleurs de melange du système ethyl-3 pentanol-3 tetrachlorure de carbone. H. Brusset, M. Desgranges et J. C. Lecoq, 3207.

Deslongchamps, P.

Total synthesis of (+)-occidentolol. M. Sergent, M. Mongrain, and P. Deslongchamps, 336.
A simple synthesis of 2-methoxy and 2-ethoxytetrahydrofuran. D. Fréhel and P. Deslongchamps, 1783.
Synthesis of 1-methyl-tricyclo[5.2.2.0^{2,6}]undec-2(6)-ene-8-one. C. Mercier, A. R. Addas, and P. Deslongchamps, 1882.
Ceric ammonium nitrate oxidation of cyclic ketones. P. Soucy, T.-L. Ho, and P. Deslongchamps, 2047.
The importance of conformation in the ozonolysis of acetals. P. Deslongchamps, C. Moreau, D. Fréhel, and P. Atlani, 3402.
The importance of conformation of the tetrahedral intermediate in the hydrolysis of esters. Selective cleavage of the tetrahedral intermediate controlled by orbital orientation. P. Deslongchamps, P. Atlani, D. Fréhel, and A. Malaval, 3405.

Desnoyers, J. E.

Isothermal compressibilities of aqueous solutions of tetraalkylammonium bromides. J. E. Desnoyers and P. R. Philip, 1094.
A comparative study of Bu_4NBr , NaBPh_4 , Ph_4PCl , and Ph_4AsCl in water and methanol at 25 °C: partial molal volumes, heat capacities, and viscosities. C. Jolicoeur, P. R. Philip, G. Perron, P. A. Leduc, and J. E. Desnoyers, 3167.

Despaigne, B.

Etude des oxynitrates de plomb. I. Synthèse des oxynitrates de plomb hydratés et de l'oxyde de plomb anhydre ou hydraté. H. Brusset, J. J. P. Martin, C. Martin-Lefevre, Y. Repelin, E. Husson et B. Despaigne, 184.

Dextraze, P.

Carbanions in carbohydrate chemistry: novel methods for chain extension and branching. S. Hanessian and P. Dextraze, 226.

Diaper, D. G. M.

Reactions of ozonides. IX. A radioisotopic dilution study of ozonide methanolysis. D. R. Kerur and D. G. M. Diaper, 4029.

Dickinson, J. R.

Electronic spectrum of cobalt(II) in sulfates. Part II. Equilibrium studies in Li_2SO_4 -DMSO solution and in NaHSO_4 - KHSO_4 melt. J. R. Dickinson and M. E. Stone, 2946.

Dickinson, R. A.

A stereospecific synthesis of ring A-aromatic steroids. R. A. Dickinson, R. Kubela, G. A. MacAlpine, Z. Stojanac, and Z. Valenta, 2377.

Diedrich, G. K.

Cavitation-induced reactions in pure substituted benzenes. G. K. Diedrich, P. Kruus, and L. M. Rachlis, 1743.

Diehl, P.

A nuclear magnetic resonance study of norbornadiene partially oriented in a nematic phase. E. E. Burnell and P. Diehl, 3566.

Dignam, M. J.

Transient response of the system $\text{Al}/\text{Al}_2\text{O}_3/\text{electrolyte}$. Part I. Galvanostatic transients. D. G. W. Goad and M. J. Dignam, 3259.
Transient response of the system $\text{Al}/\text{Al}_2\text{O}_3/\text{electrolyte}$. Part II. A.c. impedance measurements during steady-state film growth. D. G. W. Goad and M. J. Dignam, 3267.

Dimmock, J. R.

Mass spectrometry of some nuclear substituted styryl ketones. P. J. Smith, J. R. Dimmock, and W. G. Taylor, 871.

Diot, A.

A quantum chemical conformational analysis of the ethylenediamine molecule. N. Hadjiliadis, A. Diot, and T. Theophanides, 1005.

- Di Paolo, T.**
Model calculations on the influence of mechanical and electrical anharmonicity on infrared intensities: relation to hydrogen bonding. T. Di Paolo, C. Bourdéron, and C. Sandorfy, 3161.
- Dirinck, P.**
Nuclear magnetic resonance experiments on acetals. 35. Proton magnetic resonance spectra and quantitative conformational analysis of 4-fluoro-methylated-6-Me-1,3-dioxanes. P. Dirinck and M. Anteunis, 412.
Nuclear magnetic resonance experiments on acetals. 36. Proton magnetic resonance spectra and quantitative conformational data in 5-fluoromethylated-5'-Me-1,3-dioxanes. M. Anteunis and P. Dirinck, 423.
- Dixon, K. R.**
Hydroxy complexes of platinum(II) and palladium(II). G. W. Bushnell, K. R. Dixon, R. G. Hunter, and J. J. McFarland, 3694.
- Djerassi, C.**
Mass spectrometry in structural and stereochemical problems. CCXVII. Electron impact promoted fragmentation of *O*-methyl oximes of some α,β -unsaturated ketones and methyl substituted cyclohexanones. Y. M. Sheikh, R. J. Liedtke, A. M. Duffield, and C. Djerassi, 2776.
- Dodelet, J.-P.**
Effect of electric field strength on the free ion yields in the X-radiolysis of liquids: influence of molecular structure and temperature. J.-P. Dodelet, P. G. Fuochi, and G. R. Freeman, 1617.
Mobilities and ranges of electrons in liquids: effect of molecular structure in C_5 - C_{12} alkanes. J.-P. Dodelet and G. R. Freeman, 2667.
Comparison between molecular structure effects in triplet positronium annihilation rates and radiolysis free ion yields in liquid hydrocarbons. G. R. Freeman and J.-P. Dodelet, 2697.
Kinetics of charge scavenging in γ irradiated liquids with large free ion yields. J.-P. Dodelet and G. R. Freeman, 2729.
- Doetsch, I. H.**
Separation of gas mixtures by accommodation pumping. I. H. Doetsch and S. A. Ryce, 957.
- Donaldson, B.**
Conformational studies of acyclic organophosphate esters using nuclear magnetic resonance spectroscopy. B. Donaldson and L. D. Hall, 2111.
- Drake, J. E.**
A convenient synthesis of monobromogermane. J. W. Anderson, G. K. Barker, J. E. Drake, and R. T. Hemmings, 1607.
- Dubeau, C.**
Influence des paramètres géométriques sur la résistance d'une cellule électrolytique. J. C. Sisi, C. Dubeau et J. P. Pélissier, 2491.
- Ducep, J.-B.**
Sulfur-free penicillin derivatives. I. Functionalization at C5. S. Wolfe, W. S. Lee, G. Kannengiesser, and J.-B. Ducep, 2894.
Sulfur-free penicillin derivatives. II. Functionalization of the methyl groups. S. Wolfe, W. S. Lee, J.-B. Ducep, and G. Kannengiesser, 2898.
Sulfur-free penicillin derivatives. III. Regeneration of fused β -lactams via intramolecular displacement. S. Wolfe, J.-B. Ducep, G. Kannengiesser, and W. S. Lee, 2902.
- Duffield, A. M.**
Mass spectrometry in structural and stereochemical problems. CCXVII. Electron impact promoted fragmentation of *O*-methyl oximes of some α,β -unsaturated ketones and methyl substituted cyclohexanones. Y. M. Sheikh, R. J. Liedtke, A. M. Duffield, and C. Djerassi, 2776.
- Dumas, P.**
Metals intercalated in graphite. I. Reduction and oxidation. J.-M. Lalancette, G. Rollin, and P. Dumas, 3058.
- Dunlop, P. J.**
The concentration dependence at 1 atm pressure and 300 °K of the binary diffusion coefficients of the systems helium-carbon dioxide, helium-nitrous oxide, and helium-sulfur hexafluoride. K. R. Harris, T. N. Bell, and P. J. Dunlop, 1874.
- Dunn, G. E.**
Thermal rearrangement of acyl groups in anhydronucleosides. A convenient synthesis of 5'-*O*-acetylanhydrouridine. K. K. Ogilvie, J. B. Westmore, G. Taylor, D. Lin, D. Iwacha, H. Wayborn, and G. E. Dunn, 2365.
Kinetics and mechanism of decarboxylation of some pyridinecarboxylic acids in aqueous solution. G. E. Dunn, G. K. J. Lee, and H. Thimm, 3017.
- Dunning, B. K.**
Anomalous rate laws in the halogenation of carbon tetrahalides. B. K. Dunning and H. O. Pritchard, 1785.
- Dunsmore, G.**
Evaluation of the binding constants, bound chemical shifts, and stoichiometry of lanthanide-substrate complexes. I. Armitage, G. Dunsmore, L. D. Hall, and A. G. Marshall, 2119.
- Durham, D. G.**
The chlorination of pyrroles. Part III. D. G. Durham, C. G. Hughes, and A. H. Rees, 3223.
- Durst, T.**
Metallation of *N*-substituted β -lactams. A method for the introduction of 3-substituents into β -lactams. T. Durst and M. J. LeBelle, 3196.

Dutton, G. G. S.

- Synthesis of 6-*O*-(4-*O*-methyl- β -D-glucopyranosyl)-D-galactose. J. M. Berry and G. G. S. Dutton, 1424.
4,6-*O*-(1-Carboxyethylidene)-D-mannose as a structural unit in capsular polysaccharide of *Klebsiella* K-type 5. G. G. S. Dutton and M. T. Yang, 2382.
Synthesis of 4-*O*- β -D-glucopyranosyl-L-rhamnopyranose. G. M. Bebaud and G. G. S. Dutton, 3373.
Proton magnetic resonance spectroscopy of trimethylsilyl derivatives of hydroxy acids. G. G. S. Dutton, N. Funnell, and K. B. Gibney, 3913.

Eachus, R. S.

- An electron spin resonance study of high energy radiation damage in tetrapotassium hexacyanoruthenate trihydrate, $K_4Ru(II)(CN)_6 \cdot 3H_2O$. R. S. Eachus and F. G. Herring, 162.

Eber, J.

- A total synthesis of cadin-4,10(15)-dien-3 α -ol: structure of khusinol. R. B. Kelly and J. Eber, 3272.

Edward, J. T.

- Optical activities of two steroids containing a chiral cyclopentene ring. J. T. Edward, N. E. Lawson, and D. L'Anglais, 766.
Thiohydantoins. IX. Tautomerism of some methylation products. J. T. Edward and J. K. Liu, 2423.
Photolysis and thermolysis of ethyl diazomalonanilate and of 5-hydroxy-1,4-diphenyl-1,2,3-triazole in various alcohols. N. T. Buu and J. T. Edward, 3719.
Photolysis of ethyl diazomalonanilate in acetonitrile. N. T. Buu and J. T. Edward, 3730.
Thiohydantoins. X. Kinetic studies of the acid hydrolysis of 1-acyl-2-thiohydantoins. W. I. Congdon and J. T. Edward, 3767.
Thiohydantoins. XI. Kinetic studies of the alkaline hydrolysis of 1-acyl-2-thiohydantoins. W. I. Congdon and J. T. Edward, 3780.
Thiohydantoins. XII. Secondary deuterium isotope effect in the acid- and base-catalyzed hydrolysis of 1-acetyl-5,5-dimethyl-2-thiohydantoin. W. I. Congdon and J. T. Edward, 3921.

Edwards, O. E.

- Reactions of chloramines with Ag(0) and Ag(I) states. O. E. Edwards, D. Vocelle, and J. W. ApSimon, 1167.

Einstein, F. W. B.

- The crystal and molecular structure of 3-chloro-3-deoxy-1,2:5,6-di-*O*-isopropylidene- β -D-idose. F. W. B. Einstein and K. N. Slessor, 93.
The crystal and molecular structure of trinitrato-2,2'-bipyridylmanganese(III): a complex with three distinctly different nitrate ligands. F. W. B. Einstein, D. W. Johnson, and D. Sutton, 3332.

Elder, J. L. M.

- The photochemistry of 1-methoxy-1,4-dihydro-1,4-ethenoanthracene. C. O. Bender, J. L. M. Elder, A. J. Herbst, and L. E. Miller, 395.

Elliott, R. W.

- Diffusion of some hydrocarbons in air: a regularity in the diffusion coefficients of a homologous series. R. W. Elliott and H. Watts, 31.

Ellis, B.

- n*-Butylamine adsorption onto amorphous silica. C. Clark-Monks and B. Ellis, 907.

El-Sherief, H. A. H.

- Molecular rearrangements. Part I. The thermal rearrangement of the benzyl naphthyl ethers. M. Z. A. Badr and H. A. H. El-Sherief, 259.

Engel, Ch. R.

- The Cotton effects of conjugated homoannular dienes. I. The non-generality of the rule of Moscovitz. J. Lessard, L. Ruest, and Ch. R. Engel, 1433.

Erno, B. P.

- Influence of surface area variation on the kinetics of hydration of tricalcium silicate. K. G. McCurdy and B. P. Erno, 701.

Ernst, L.

- Proton magnetic resonance spectrum of 1-penten-3-yne. INDO and CNDO/2 molecular orbital calculations on long-range spin-spin coupling constants in enynes. L. Ernst, H. M. Hutton, and T. Schaefer, 1863.
Long-range spin-spin coupling constants from amino protons and ^{15}N to ring protons in aniline- ^{15}N and some derivatives. INDO molecular orbital calculations. R. Wasylchen, J. B. Rowbotham, L. Ernst, and T. Schaefer, 2575.

Essig, T. R.

- The measurement of the activity coefficient ratios of protonated and neutral forms of Hammett indicators in several strong acids. T. R. Essig and J. A. Marinsky, 2254.

Exner, O.

- Dipole moments and conformation of sultones, thiosultones, and sultines. O. Exner, D. N. Harpp, and J. G. Gleason, 548.

Falle, H. R.

- Theoretical anisotropic hyperfine tensors in neutral radicals. H. R. Falle and M. A. Whitehead, 139.

Farmer, J. B.

- An electron paramagnetic resonance study of a fast Lewis acid-base reaction between copper(II) bis-(diethyldithiocarbamate) and pyridine in benzene. J. B. Farmer, F. G. Herring, and R. L. Tapping, 2079.

Faught, J. B.

- The crystal and molecular structure of tetrameric phosphonitrilic isothiocyanate. J. B. Faught, 1315.

- Fawcett, W. R.**
The electroreduction of substituted benzofurazans. W. R. Fawcett, P. A. Forte, R. O. Loutfy, and J. M. Prokipcak, 263.
- Fenster, A. E.**
 π -Cyclopentadienylmanganese thiocarbonyl complexes. A. E. Fenster and I. S. Butler, 598.
- Ferretti, A.**
Structure and reactions of cuprous thiobenzoate. A. Ferretti, 4056.
- Findlay, D. M.**
Thermal routes to substituted cyclopentadienes. D. M. Findlay, M. L. Roy, and S. McLean, 3186.
- Fischer, A.**
An addition reaction of indane with nitric acid in acetic anhydride. A. Fischer, C. C. Greig, A. L. Wilkinson, and D. R. A. Leonard, 2211.
Addition reactions in the nitration of some polycyclic aromatic compounds. A. Fischer and D. R. A. Leonard, 3367.
Adduct intermediates in the side-chain nitration of 1,4-dimethylnaphthalene. A. Fischer and A. L. Wilkinson, 3988.
- Flanagan, T. B.**
Desorption of hydrogen from palladium and palladium-silver alloys followed by differential scanning calorimetry. D. Artman and T. B. Flanagan, 1321.
- Flengas, S. N.**
Theory of enthalpy of mixing in reactive charge asymmetrical molten salt systems. Part II. Ternary solutions. S. N. Flengas and J. M. Skeaff, 1345.
- Fliszár, S.**
Etude des oxyphosphoranes en tant qu'intermédiaires lors de la réduction de l'ozonide du styrène par les phosphites. J. Carles et S. Fliszár, 2552.
Quantitative investigation of the ozonolysis reaction. XVII. Relative reaction rates for the ozone attack on phenylethylenes. G. Klutsch and S. Fliszár, 2841.
- Focella, A.**
The synthesis of two phenacetin metabolites. A. Focella, P. Heslin, and S. Teitel, 2025.
- Fogelman, J.**
A proton nuclear magnetic resonance study of the exchange reactions of acetonitrile-boron trihalide adducts with excess acetonitrile. J. Fogelman and J. M. Miller, 1262.
- Folkman, T.**
Ruthenium and arsenic electrode potentials in fused LiCl-KCl eutectic. T. Folkman and J. A. Plambeck, 3911.
- Forbes, B. C.**
The preparation and paramagnetic susceptibility of β -MnSe. R. M. Murray, B. C. Forbes, and R. D. Heyding, 4059.
- Forel, M. T.**
Etude par spectrométrie de vibration des composés d'addition formés entre le chlorure ou le bromure d'aluminium et le dimethylsulfoxyde. J. Meunier et M. T. Forel, 1157.
- Forrest, B. J.**
The ultraviolet absorption spectrum of furazan. B. J. Forrest and A. W. Richardson, 2088.
- Forrester, J. M.**
Sequence studies in biosynthesis: trichotecin. J. M. Forrester and T. Money, 3310.
- Forster, W.**
Studies of β -diketone complexes of rhenium. I. Tris(pentane-2,4-dionato)rhenium(III) and tris(1,1,1,5,5,5-hexafluoropentane-2,4-dionato)rhenium(III). W. D. Courrier, W. Forster, C. J. L. Lock, and G. Turner, 8.
- Forte, P. A.**
The electroreduction of substituted benzofurazans. W. R. Fawcett, P. A. Forte, R. O. Loutfy, and J. M. Prokipcak, 263.
- Fortin, C. J.**
The ultraviolet flash photolysis of ozone and the reaction of $O(^1D)$ with H_2O . C. J. Fortin, D. R. Snelling, and A. Tardif, 2747.
- Fournier, R. P.**
Vibrational spectra of SiH_4 and SiD_4 - SiH_4 mixtures in the condensed states. R. P. Fournier, R. Savoie, N. D. The, R. Belzile, and A. Cabana, 35.
Erratum: Vibrational spectra of SiH_4 and SiD_4 - SiH_4 mixtures in the condensed states. R. P. Fournier, R. Savoie, N. D. The, R. Belzile, and A. Cabana, 1442.
- Frais, P. W.**
The preparation, physical properties, and structure of oxotetrachloroaurorhenium(IV), $ReOCl_4(OH_2)$. P. W. Fraiss and C. J. L. Lock, 1811.
The structure and physical properties of μ -oxo-bis{oxo-trichloro(*O*-perrhenylchloride)rhenium(VI)}, and the non-existence of β - $ReOCl_3$. C. Calvo, P. W. Fraiss, and C. J. L. Lock, 3607.
- Fraser-Reid, B.**
Cyclopropylcarbonyl-oxo-carbonium ions. Part V. Synthesis and chemistry of some cyclopropyl glycopyranosides. B. Radatus and B. Fraser-Reid, 2909.
Cyclopropylcarbonyl-oxo-carbonium ions. Part VI. Synthesis and chemistry of an epimeric pair of homoallyl iodides (3-iodomethyl glycals). B. Fraser-Reid and B. Radatus, 2919.
The synthesis of some α -cyclopropylcarbonyl glycopyranosides. B. Fraser-Reid and B. J. Carthy, 2928.

Freeman, G. R.

Effect of electric field strength on the free ion yields in the X-radiolysis of liquids: influence of molecular structure and temperature. J.-P. Dodelet, P. G. Fuochi, and G. R. Freeman, 1617.

Mobilities and ranges of electrons in liquids: effect of molecular structure in C_5 - C_{12} alkanes. J.-P. Dodelet and G. R. Freeman, 2667.

Comparison between molecular structure effects in triplet positronium annihilation rates and radiolysis free ion yields in liquid hydrocarbons. G. R. Freeman and J.-P. Dodelet, 2697.

Kinetics of charge scavenging in γ irradiated liquids with large free ion yields. J.-P. Dodelet and G. R. Freeman, 2729.

Solvent structure effects and diffusion control in the reaction between solvated electrons and solvated protons in alcohols and water. K. N. Jha, G. L. Bolton, and G. R. Freeman, 3073.

Fréhel, D.

A simple synthesis of 2-methoxy and 2-ethoxytetrahydrofuran. D. Fréhel and P. Deslongchamps, 1783.

The importance of conformation in the ozonolysis of acetals. P. Deslongchamps, C. Moreau, D. Fréhel, and P. Atlani, 3402.

The importance of conformation of the tetrahedral intermediate in the hydrolysis of esters. Selective cleavage of the tetrahedral intermediate controlled by orbital orientation. P. Deslongchamps, P. Atlani, D. Fréhel, and A. Malaval, 3405.

Frost, D. C.

Photoelectron spectra of some bromoethylenes and 2-bromopropene. D. Chadwick, D. C. Frost, A. Katrib, C. A. McDowell, and R. A. N. McLean, 2642.

Fruchier, A.

Conversion of nonlinear shift reagent plots to linear plots. J. W. ApSimon, H. Beierbeck, and A. Fruchier, 2725.

Automatic sorting of signals in shift reagent spectra. J. W. ApSimon, H. Beierbeck, and A. Fruchier, 2905.

Fueki, K.

Optical and thermal bleaching of trapped electrons in aliphatic amine glasses. S. Noda, K. Fueki, and Z. Kuri, 2699.

Reactivity of organic halides toward the mobile electron in methyltetrahydrofuran glass. N. Kato, K. Fueki, and Z. Kuri, 2702.

On the mobility of quasifree electrons in liquid methane. K. Fueki, 3379.

Fujimoto, T.

Assessment of free radical catalysis in thermal methyl isocyanide isomerization. Variation of inert gas efficiency with k/k_{-1} . T. Fujimoto, F. M. Wang, and B. S. Rabinovitch, 3251.

Fujita, T.

A new preparative method of 1,6-diketones from fatty acids and vinylmagnesium chloride. S. Watanabe, K. Suga, T. Fujita, and Y. Takahashi, 2786.

Fung, D. P. C.

The pyrolysis of some neopentyl xanthates: a competitive formation of olefins and dithiolcarbonates. K. G. Rutherford, B. K. Tang, L. K. M. Lam, and D. P. C. Fung, 3288.

Funnell, N.

Proton magnetic resonance spectroscopy of trimethylsilyl derivatives of hydroxy acids. G. G. S. Dutton, N. Funnell, and K. B. Gibney, 3913.

Fuochi, P. G.

Effect of electric field strength on the free ion yields in the X-radiolysis of liquids: influence of molecular structure and temperature. J.-P. Dodelet, P. G. Fuochi, and G. R. Freeman, 1617.

Furimsky, E.

Kinetics of the mercury-photosensitized decomposition of neopentane. Part I. The overall mechanism. E. Furimsky and K. J. Laidler, 1115.

Kinetics of the mercury-photosensitized decomposition of neopentane. Part II. Reactions of the methyl and neopentyl radicals. E. Furimsky and K. J. Laidler, 1123.

Kinetics of the mercury-photosensitized decomposition of neopentane. Part III. The secondary reactions. E. Furimsky and K. J. Laidler, 1129.

Fyfe, C. A.

High resolution nuclear magnetic resonance investigation of the structure of the adducts formed by the interaction of benzylidenemalononitriles with trialkylphosphines. C. A. Fyfe and M. Zbozny, 1713.

Gait, R. J.

Use of *N*-carboxyanhydrides in the synthesis of dipeptides. The improvement of isolated yields by the facile removal of buffer components. R. J. Gait, J. R. Langlois, and R. E. Williams, 299.

Gallivan, J. B.

Solvent effects on the phosphorescent state of some aromatic carbonyls. J. B. Gallivan, 3601.

Gamble, D. S.

Potentiometric titration of fulvic acid: equivalence point calculations and acidic functional groups. D. S. Gamble, 2680.

Garg, S. K.

The hydrate of hexafluorophosphoric acid. D. W. Davidson and S. K. Garg, 3515.

- Garratt, D. G.**
The addition of 4-chloro- and 2,4-dinitrobenzenesulfonyl chloride to *cis*- and *trans*-1-phenylpropene. G. H. Schmid, M. Csizmadia, V. J. Nowlan, and D. G. Garratt, 2457.
- Gaucher, C. M.**
The far U.V. photolysis of alkenes: the use of hydrogen sulfide as a radical scavenger. G. J. Collin, P. M. Perrin, and C. M. Gaucher, 2391.
- Gaylor, J. R.**
A kinetic study of the oxidative addition of substituted benzenethiols towards *trans*-halocarbonylbis(triphenylphosphine)iridium(I). J. R. Gaylor and C. V. Senoff, 1868.
Erratum: A kinetic study of the oxidative addition of substituted benzenethiols towards *trans*-halocarbonylbis(triphenylphosphine)iridium(I). J. R. Gaylor and C. V. Senoff, 3085.
- Gesser, H. D.**
Hydrogen atom recombination on glass surfaces. L. W. Bader and H. D. Gesser, 2305.
- Gibbons, C.**
The photolysis of benzoic acid in the vapor phase. F. Chau, C. Gibbons, and D. Barton, 2017.
- Gibney, K. B.**
Proton magnetic resonance spectroscopy of trimethylsilyl derivatives of hydroxy acids. G. G. S. Dutton, N. Funnell, and K. B. Gibney, 3913.
- Gibson, J. A.**
Nuclear magnetic resonance study of base-catalyzed hydrolysis of trimethylfluorosilane. J. A. Gibson and A. F. Janzen, 3087.
- Giguère, P. A.**
Infrared studies on rotational isomerism. VI. Normal-coordinate analysis of 2-chloro-, 2-bromo-, and 2-cyanoethanol. P. A. Giguère and M. Schneider, 152.
Etude spectroscopique des dérivés du peroxyde d'hydrogène. V. Les percarbonates KHCO_4 et $\text{K}_2\text{C}_2\text{O}_6$. P. A. Giguère et D. Lemaire, 1472.
- Gilbert, R.**
Valence-shell transitions in the vacuum-ultraviolet spectra of fluorobenzenes. R. Gilbert, P. Sauvageau, and C. Sandorfy, 543.
- Gillies, G. C.**
Temperature and pressure dependence of ^{209}Bi nuclear quadrupole resonance in BiCl_3 . G. C. Gillies and R. J. C. Brown, 2586.
- Gillis, H. A.**
Pulse radiolysis of aqueous papain. J. R. Clement, D. A. Armstrong, N. V. Klassen, and H. A. Gillis, 2833.
- Gillis, L. B.**
Stereochemistry of the cycloaddition of singlet excited β -substituted styrenes to olefins. O. L. Chapman, R. D. Lura, R. M. Owens, E. D. Plank, S. C. Shim, D. R. Arnold, and L. B. Gillis, 1984.
- Gilroy, K. M.**
Determination of $D[(\text{CH}_3)_3\text{Pb}-\text{CH}_3]$ by the toluene carrier method. K. M. Gilroy, S. J. Price, and N. J. Webster, 2639.
- Glass, R. S.**
Nitration studies on 2-isopropylimidazole. R. S. Glass, J. F. Blount, D. Butler, A. Perrotta, and E. P. Oliveto, 3472.
- Glass, R. W.**
The effect of heat treatment of silica gels on the calorimetric heats of adsorption of sulfur dioxide up to one-twentieth monolayer coverage at 423 °K. R. W. Glass and R. A. Ross, 1241.
Surface studies of heat-treated γ -aluminas in the adsorption of sulfur dioxide below monolayer coverage. R. W. Glass and R. A. Ross, 2537.
Adiabatic calorimetric studies of the adsorption of sulfur dioxide at 423 °K on heat-treated magnesias characterized by electron microscopy. R. W. Glass and R. A. Ross, 2817.
- Gleason, J. G.**
Dipole moments and conformation of sultones, thiosultones, and sultines. O. Exner, D. N. Harpp, and J. G. Gleason, 548.
- Glew, D. N.**
Evaluation of unbonded O-H groups for HDO in liquid D_2O from infrared absorptivity measurements. E. C. W. Clarke and D. N. Glew, 1655.
Aqueous nonelectrolyte solutions. Part XI. Mercury solubility in 6.10 molal sodium chloride. D. N. Glew and D. A. Hames, 3124.
- Goad, D. G. W.**
Transient response of the system $\text{Al}/\text{Al}_2\text{O}_3/\text{electrolyte}$. Part I. Galvanostatic transients. D. G. W. Goad and M. J. Dignam, 3259.
Transient response of the system $\text{Al}/\text{Al}_2\text{O}_3/\text{electrolyte}$. Part II. A.c. impedance measurements during steady-state film growth. D. G. W. Goad and M. J. Dignam, 3267.
- Gogan, N. J.**
Tribaronylchromium π -complexes of $\alpha\beta\gamma\delta$ -tetraphenylporphin and its metal chelates. N. J. Gogan and Z. U. Siddiqui, 720.
Ambident ligands. I. Phenylsulfoxyacetic acid. N. J. Gogan, M. J. Newlands, and B.-Y. Tan (Neé Yap), 3202.

Gold, M. R.

The infrared and Raman spectra of dimethyliodoarsine. H. F. Shurvell, M. R. Gold, and A. R. Norris, 2691.

Goodale, J. W.

Isotopic exchange between hydrogen and water vapor over supported metal catalysts. Part I. Kinetics of the exchange. J. H. Rolston and J. W. Goodale, 1900.

Goodwin, I.

The preparation and acetolyses of 5-deuteriated *exo*-2-norbornyl-*p*-bromobenzenesulfonates. N. H. Werstiuk, R. R. MacDonald, R. W. Ouwehand, W. L. Chan, F. P. Cappelli, J. G. Ballard, R. E. Young, R. E. Massey, G. Timmins, I. Goodwin, A. Walling, and Y. Teruta, 618.

Gordon, K. D.

Steroids and steroidases. XVI. An evaluation of synthetic routes to variously C-17-substituted Δ^5 -3-ketosteroids. J. B. Jones and K. D. Gordon, 2712.

Gordon, M.

Stereochemistry of some altersolanol B derivatives and their correlation with bostrycin. M. Gordon, A. Stoessl, and J. B. Stothers, 122.

Gough, S. R.

A low temperature dielectric cell and the permittivity of hexagonal ice to 2K. S. R. Gough, 3046.

Goutier, D.

Structure cristalline et moléculaire du thiocyanate mercurique. A. L. Beauchamp et D. Goutier, 977.

Graham, J. C.

Phosphonitric chloride—The dehydration of amides to nitriles. J. C. Graham and D. H. Marr, 3857.

Grant, C. W. M.

A selective determination of the proton nuclear relaxation times of the alkaloid vindoline. R. Burton, C. W. M. Grant, and L. D. Hall, 497.

Gravel, D.

Préparation simple et configuration de dérivés des bicyclo[3.3.1]nonanol-2 ones-9 *endo* et *exo*. Utilité de la fonction trichloro-2,2,2 éthoxycarbonyle comme groupe protecteur d'aldols. D. Gravel, S. Rahal et A. Regnault, 3846.

Gravestock, M. B.

Synthesis of lambertianic acid. R. A. Bell, M. B. Gravestock, and V. Y. Taguchi, 3749.

Grayshan, R.

Steroids and steroidases. XIII. Illustrations of the potential of lithiodithiane-epoxide reactions for the stereospecific introduction of substituents into the steroid nucleus. J. B. Jones and R. Grayshan, 810.

Steroids and steroidases. XIV. Studies on the reactions of 2-lithio-1,3-dithianes with steroids possessing spiroepoxide functions at C-3. J. B. Jones and R. Grayshan, 1407.

Steroids and steroidases. XV. Investigations of some 2-lithio-1,3-dithiane reactions directed towards the introduction of corticoid and related functions at C-17 of the steroid nucleus. J. B. Jones and R. Grayshan, 1414.

Green, R. D.

Solvation of the sodium ion. Quadrupolar broadening of the ^{23}Na nuclear magnetic resonance. R. D. Green and J. S. Martin, 3935.

Greig, C. C.

An addition reaction of indane with nitric acid in acetic anhydride. A. Fischer, C. C. Greig, A. L. Wilkinson, and D. R. A. Leonard, 2211.

Grein, F.

INDO—MO calculations and proton isotropic shifts of methyl-substituted pyridine ligands in Ni(II) complexes. M. S. Sun, F. Grein, and D. G. Brewer, 2626.

Grey, A. A.

A conformational study of lysergic acid and *iso*-lysergic acid dialkylamides by proton magnetic resonance spectroscopy. K. Bailey and A. A. Grey, 3876.

Griffin, M. G.

Oriented polycrystal formation of halogen containing organic molecules on alkali halide windows and their usefulness in vibrational spectroscopic studies. J. E. Katon, D. Sinha, M. G. Griffin, and D. A. Condit, 3255.

Griffith, E. A. H.

Conformations of bridged diphenyls. I. Crystal structure of 2-(3'-methyl-4'-nitrophenoxy)-1,3-diisopropylbenzene. E. A. H. Griffith, W. D. Chandler, and B. E. Robertson, 2963.

Conformations of bridged diphenyls. II. Crystal structure of 2-(2',4'-dinitrophenoxy)-1,3,5-tri-*t*-butylbenzene. E. A. H. Griffith, W. D. Chandler, and B. E. Robertson, 2972.

Conformations of bridged diphenyls. III. Crystal structure of 2-(2'-carbomethoxy-4'-nitrophenoxy)-1,3,5-trichlorobenzene. E. A. H. Griffith, W. D. Chandler, and B. E. Robertson, 2979.

Grosser, A. E.

Intermolecular potentials from differential cross sections: Ar + Ar. F. Kalos and A. E. Grosser, 892.

Grossert, J. S.

Aromatic halogenation with titanium(IV) chloride in presence of peroxytrifluoroacetic acid. G. K. Chip and J. S. Grossert, 1233.

- Grossman, M.**
Spectrofluorometric studies. XI. Some aspects of the photochemistry of ortho-fused benzocycloalkenes. M. Grossman, R. Kubela, G. P. Semeluk, and I. Unger, 3298.
- Gruda, I.**
Formation des dérivés *N*- et *C*-substitués au cours de l'alkylation de l'indol-2(3*H*)-one. I. Grunda, 18.
- Gübeli, A. O.**
Constantes de stabilité de cyano-complexes d'argent et produit de solubilité de AgCN. A. O. Gübeli et P. A. Côté, 1144.
- Guest, A.**
Technetium chlorides and oxochlorides. A. Guest and C. J. L. Lock, 1807.
- Gupta, R. K.**
Formation constants of copper(II) and zinc(II) with *N*-salicylideneanthranilic acid in 50–50 water–dioxane. R. K. Mehta and R. K. Gupta, 1609.
- Gupta, R. N.**
Biosynthesis of lycopodine. Pelletierine as an obligatory intermediate. J.-C. Braekman, R. N. Gupta, D. B. MacLean, and I. D. Spenser, 2591.
- Gupta, S. K.**
Second cross virial coefficients of carbon tetrachloride–gas mixtures determined by solubility measurements at high pressures. S. K. Gupta and A. D. King, Jr., 660.
- Gurudata, N.**
¹³C nuclear magnetic resonance of oximes. I. Solvent and isotope effects on the ¹³C chemical shifts of acetoxime. N. Gurudata, 1956.
- Guthrie, J. P.**
The synthesis of 17β-(4(5)imidazolyl)-5α-androstane-3β,11β-diamine: a water soluble steroid with a potentially catalytic substituent. J. P. Guthrie, 3993.
- Habashi, F.**
Identification and thermal stability of copper(I) sulfate. K. Vo Van and F. Habashi, 3872.
- Hadjiliadis, N.**
A quantum chemical conformational analysis of the ethylenediamine molecule. N. Hadjiliadis, A. Diot, and T. Theophanides, 1005.
- Haines, R. A.**
Circular dichroism of *R*-1,2-propanediamine complexes of copper(II). R. A. Haines and E. W. Crews, 3390.
- Hall, D. T.**
The oxidation of organic compounds by sodium ruthenate. D. G. Lee, D. T. Hall, and J. H. Cleland, 3741.
- Hall, L. D.**
A selective determination of the proton nuclear relaxation times of the alkaloid vindoline. R. Burton, C. W. M. Grant, and L. D. Hall, 497.
Measurements of deuterium chemical shifts by ¹H–(²H) INDOR spectroscopy. J. R. Campbell, L. D. Hall, and P. R. Steiner, 504.
Conformational studies on the 1,2:5,6-di-*O*-isopropylidene-D-hexoses. L. D. Hall, S. A. Black, K. N. Slessor, and A. S. Tracey, 1912.
Studies of organophosphorus derivatives. Part I. Nuclear magnetic resonance studies of the 2-oxo-1,3,2-dioxaphosphorinane system. L. D. Hall and R. B. Malcolm, 2092.
A novel class of isomeric phosphate esters. L. D. Hall and R. B. Malcolm, 2102.
Conformational studies of acyclic organophosphate esters using nuclear magnetic resonance spectroscopy. B. Donaldson and L. D. Hall, 2111.
Evaluation of the binding constants, bound chemical shifts, and stoichiometry of lanthanide–substrate complexes. I. Armitage, G. Dunsmore, L. D. Hall, and A. G. Marshall, 2119.
Applications of lanthanide shift reagents to the identification of ¹³C resonances. I. Armitage, J. R. Campbell, and L. D. Hall, 2139.
- Hallett, F. R.**
Electron spin resonance studies of γ-ray irradiated single crystals of D-tartaric acid. J. K. Mulhiney, F. R. Hallett, and F. C. Adam, 3706.
- Hamer, G. K.**
An investigation of long-range proton–proton coupling constants in phenylacetylene derivatives. C. J. Macdonald, G. K. Hamer, I. R. Peat, and W. F. Reynolds, 2035.
- Hames, D. A.**
Aqueous nonelectrolyte solutions. Part XI. Mercury solubility in 6.10 molal sodium chloride. D. N. Glew and D. A. Hames, 3124.
- Hamid, M. A.**
The reaction of organometallic compounds involving silicon. Reactions to triphenyl-, diphenylmethyl-, and phenyldimethylsilyl-lithium with 9-phenylfluorene in tetrahydrofuran. M. A. Hamid, 3761.
- Hanessian, S.**
Carbanions in carbohydrate chemistry: novel methods for chain extension and branching. S. Hanessian and P. Dextraze, 226.

- Chemistry and synthetic utility of α -(dimethylamino)benzylidene and 1-(dimethylamino)ethylidene acetals. S. Hanessian and E. Moralioglu, 233.
- The reaction of *O*-benzylidene sugars with *N*-bromosuccinimide. VI. A new synthesis of 2'-deoxyuridine and some of its selectively substituted derivatives. M. M. Ponpipom and S. Hanessian, 246.
- The reaction of *O*-benzylidene sugars with *N*-bromosuccinimide. VII. Stereochemical and mechanical aspects in the pyrimidine nucleoside series. M. M. Ponpipom and S. Hanessian, 253.
- Hanlan, J. F.**
Infrared and nuclear magnetic resonance spectra of methyl titanium halides. J. F. Hanlan and J. D. McCowan, 747.
Thermal decomposition of methyl titanium chlorides. J. D. McCowan and J. F. Hanlan, 755.
- Hanna, J. D.**
Studies on nucleation from solution of some nickel dioximates. J. D. Hanna and C. E. Hileman, Jr., 2859.
- Hansen, L. D.**
Field and resonance components of substituent effects in relations to the Hammett equation. L. D. Hansen and L. G. Hepler, 1030.
- Haque, R.**
Aqueous solutions of nonpolar compounds. Heat-capacity effects. R. D. Wauchope and R. Haque, 133.
- Harbourne, D. A.**
The preparation of iron carbonyl complexes of fluorocarbon-bridged ligands. L. S. Chia, W. R. Cullen, and D. A. Harbourne, 2182.
- Harpp, D. N.**
Dipole moments and conformation of sultones, thiosultones, and sultines. O. Exner, D. N. Harpp, and J. G. Gleason, 548.
- Harris, K. R.**
The concentration dependence at 1 atm pressure and 300 °K of the binary diffusion coefficients of the systems helium-carbon dioxide, helium-nitrous oxide, and helium-sulfur hexafluoride. K. R. Harris, T. N. Bell, and P. J. Dunlop, 1874.
- Harriss, M. G.**
The trifluoroacetic acid solvent system. Part IV. Triple ions. M. G. Harriss and J. B. Milne, 3789.
- Harrod, J. F.**
Chemistry of the transition metals. II. Reaction of branched alkyl chlorides with titanium. W. R. Summers and J. F. Harrod, 2167.
A curious synthesis of some μ_4 -oxo-hexa- μ -halotetracopper(II) complexes. B. Carr and J. F. Harrod, 2792.
- Hartman, J. S.**
Urea-boron trihalide adducts. I. The boron trifluoride adduct of tetramethylurea. J. S. Hartman and G. J. Schrobilgen, 713.
- Harvey, K. B.**
Infrared and Raman spectra of single crystals of anhydrous strontium formate. N. R. McQuaker and K. B. Harvey, 1453.
- Harvey, R.**
Isomérisation des épisulfures. K. Jankowski et R. Harvey, 3930.
- Hayward, E. J.**
Chemical reactions of methane in a triboelectric discharge. W. G. Alcock, E. J. Hayward, B. Mile, and B. Ward, 3813.
- Hayward, L. D.**
Circular dichroism of nitrate esters: a planar symmetry rule for the nitrate chromophore. R. E. Barton and L. D. Hayward, 1719.
- Hayward, R. J.**
Photocyclization reactions of aryl polyenes. V. Photochemical synthesis of substituted chrysenes. C. C. Leznoff and R. J. Hayward, 528.
- Heacock, R. A.**
Chemistry of aminochromes. Part XV. The reaction of epinochrome with thiols. W. S. Powell and R. A. Heacock, 3360.
- Heathcock, C. H.**
(+)-Occidentalol: absolute stereostructure and total synthesis. Y. Amano and C. H. Heathcock, 340.
- Hedgeland, R.**
The reactions of *N,N'*-dimethylethylenediamine with cyclic phosphonitrilic halides. T. Chivers and R. Hedgeland, 1017.
- Heicklen, J.**
Photolysis of 2,5- and 2,4-dimethylpyrrole vapors at room temperature. E. C. Wu and J. Heicklen, 1678.
The photolysis of tetra(trifluoromethyl)thiophene vapor. H. A. Wiebe, S. Braslavsky, and J. Heicklen, 2721.
- Hemmings, R. T.**
A convenient synthesis of monobromogermene. J. W. Anderson, G. K. Barker, J. E. Drake, and R. T. Hemmings, 1607.
- Hencher, J. L.**
The conformation of racemic 4,6-dimethyl trimethylene sulfite by gas phase electron diffraction. F. J. Mustoe and J. L. Hencher, 3892.
- Hepler, L. G.**
Field and resonance components of substituent effects in relations to the Hammett equation. L. D. Hansen and L. G. Hepler, 1030.
- Herasymowych, O. S.**
Direct photolysis of 2-propanol vapor. O. S. Herasymowych and A. R. Knight, 2217.

- Herbst, A. J.**
The photochemistry of 1-methoxy-1,4-dihydro-1,4-ethenoanthracene. C. O. Bender, J. L. M. Elder, A. J. Herbst, and L. E. Miller, 395.
- Heric, E. L.**
Some mixtures of carbon tetrachloride with several *n*-alkanes: enthalpies and energies of mixing. J. M. Berryman and E. L. Heric, 3799.
- Herring, F. G.**
An electron spin resonance study of high energy radiation damage in tetrapotassium hexacyanoruthenate trihydrate, $K_4Ru(II)(CN)_6 \cdot 3H_2O$. R. S. Eachus and F. G. Herring, 162.
An electron paramagnetic resonance study of a fast Lewis acid-base reaction between copper(II) *bis*-(diethyldithiocarbamate) and pyridine in benzene. J. B. Farmer, F. G. Herring, and R. L. Tapping, 2079.
- Herz, J. E.**
Doubling proton magnetic resonance signals by use of tris(dipivalomethanato)europium(III). P. Joseph-Nathan, J. E. Herz, and V. M. Rodriguez, 2788.
- Heslin, P.**
The synthesis of two phenacetin metabolites. A. Focella, P. Heslin, and S. Teitel, 2025.
- Hetnarski, B.**
Charge transfer complexes with nitrate esters as electron acceptors. T. Urbański, B. Hetnarski, and W. Poludnikiewicz, 3340.
- Heyding, R. D.**
The preparation and paramagnetic susceptibility of β -MnSe. R. M. Murray, B. C. Forbes, and R. D. Heyding, 4059.
- Hijazi, N. H.**
Non-steady-state kinetics for a double-intermediate enzyme mechanism: the case of high enzyme concentrations. N. H. Hijazi and K. J. Laidler, 1440.
- Hileman, Jr., C. E.**
Studies on nucleation from solution of some nickel dioximates. J. D. Hanna and C. E. Hileman, Jr., 2859.
- Ho, H. C.**
Synthesis of *cis*-jasmone and dihydrojasmone. H. C. Ho, T.-L. Ho, and C. M. Wong, 2718.
- Ho, P.-t.**
A model compound for anhydroryanodol. B. G. Brownlee, P.-t. Ho, and K. Wiesner, 4013.
- Ho, T.-L.**
A total synthesis of *dl*-occidol. T.-L. Ho, 1098.
Ceric ammonium nitrate oxidation of cyclic ketones. P. Soucy, T.-L. Ho, and P. Deslongchamps, 2047.
Synthesis of *cis*-jasmone and dihydrojasmone. H. C. Ho, T.-L. Ho, and C. M. Wong, 2718.
Dethioacetalization with thallium(III) trifluoroacetate. T.-L. Ho and C. M. Wong, 3740.
- Hocking, M. B.**
The effect of heat on *cis*- and *trans*-crotonic acids: alternatives to direct *cis-trans* isomerism. M. B. Hocking, 1224.
- Ho-Duc, N.**
Etude de propriétés hydrodynamiques de solutions de polymères en mauvais solvants. N. Ho-Duc, H. Daoust et F. Bissonnette, 305.
- Holah, D. G.**
Reactions of 1,2,5-triphenylphosphole and its oxide, sulfide, and selenide with some transition metal halides. D. Budd, R. Chuchman, D. G. Holah, A. N. Hughes, and B. C. Hui, 1008.
Rhodium(I) complexes of 1,2,5-triphenylphosphole oxide. D. G. Holah, A. N. Hughes, and B. C. Hui, 2442.
Rhodium(I) and (III) complexes of some phospholes and their behavior as homogeneous hydrogenation catalysts. D. G. Holah, A. N. Hughes, and B. C. Hui, 3714.
- Hooper, J. W.**
Approaches to the synthesis of triterpenoids. II. Some tetracyclic precursors suitable for conversion into pentacyclic triterpenoids. J. W. ApSimon, P. Baker, J. Buccini, J. W. Hooper, and S. Macaulay, 1944.
- Hooz, J.**
A convenient synthesis of propargylic esters and γ -keto esters. The reaction of trialkynylboranes with ethyl diazoacetate, and the unidirectional hydration of propargylic esters. J. Hooz and R. B. Layton, 1105.
An electron spin resonance examination of ferrocenylalkyl- and aryl ketyls. G. Bigam, J. Hooz, S. Linke, R. E. D. McClung, M. W. Mosher, and D. D. Tanner, 1825.
A regiospecific construction of α -haloketones by the reaction of enol borinates with *N*-bromo- and *N*-chlorosuccinimide. A convenient method for converting olefins into α -haloketones and esters. J. Hooz and J. N. Bridson, 2387.
- Horning, D. E.**
Five-membered heterocyclic thiones. Part I. 1,3,4-Oxadiazole-2-thione. D. E. Horning and J. M. Muchowski, 3079.
A new synthesis of 5-phenyl-2,3-dihydro- and 2,3,4,5-tetrahydro-1*H*-2-benzazepin-1-ones. K. Ackermann, D. E. Horning, and J. M. Muchowski, 3886.
- Howard, J. A.**
Electron spin resonance spectrum of the *tert*-butylperoxy radical, $B^{16}O^{17}O^{\cdot}$. J. A. Howard, 1981.
Absolute rate constants for hydrocarbon autoxidation. XXI. Activation energies for propagation and the correlation of

- propagation rate constants with carbon-hydrogen bond strengths. S. Korcek, J. H. B. Chenier, J. A. Howard, and K. U. Ingold, 2285.
- Absolute rate constants for hydrocarbon autoxidation. XXII. The autoxidation of some vinyl compounds. J. A. Howard, 2298.
- The self-reaction of *sec*-alkylperoxy radicals: a kinetic electron spin resonance study. J. A. Howard and J. E. Bennett, 2374.
- Howery, D. G.**
Application of factor analysis to gas-liquid chromatography. P. H. Weiner and D. G. Howery, 448.
- Huber, H.**
Matrix infrared and Raman spectroscopic evidence for $\text{Pd}(\text{N}_2)_3$ in solid nitrogen. G. A. Ozin, M. Moskovits, P. Kündig, and H. Huber, 2385.
Binary dioxygen complexes of nickel; infrared spectroscopic evidence for $\text{Ni}(\text{O}_2)$ and $(\text{O}_2)\text{Ni}(\text{O}_2)$ in low temperature matrices. H. Huber and G. A. Ozin, 3746.
- Hubert, J.**
Zeise's salt, $\text{K}[\text{Pt}(\text{C}_2\text{H}_4)\text{Cl}_3]$ anhydrous and monohydrate and the platinum-olefin interaction. J. Hubert, P. C. Kong, F. D. Rochon, and T. Theophanides, 1596.
- Hudson, J. C.**
Sterically hindered aromatic compounds. IV. Solvolysis of *t*-butyl-, phenyl-, and trialkyl-benzyl chlorides in ethanol-water. Evidence for steric acceleration in 2,4,6-tri-*t*-butylbenzyl chloride. L. R. C. Barclay, H. R. Sonawane, and J. C. Hudson, 2318.
Sterically hindered aromatic compounds. V. Solvolysis of *p*-methyl, 2,4,6-trimethyl-, and 2,4,6-tri-*t*-butylbenzyl chloride. Effect of solvent and α -deuterium substitution. L. R. C. Barclay, J. R. Mercer, and J. C. Hudson, 3965.
- Hughes, A. N.**
Reactions of 1,2,5-triphenylphosphole and its oxide, sulfide, and selenide with some transition metal halides. D. Budd, R. Chuchman, D. G. Holah, A. N. Hughes, and B. C. Hui, 1008.
Rhodium(I) complexes of 1,2,5-triphenylphosphole oxide. D. G. Holah, A. N. Hughes, and B. C. Hui, 2442.
Cycloaddition and related reactions of some unsaturated phosphines with dimethyl acetylenedicarboxylate. M. Davies, A. N. Hughes, and S. W. S. Jafry, 3625.
Rhodium(I) and (III) complexes of some phospholes and their behavior as homogeneous hydrogenation catalysts. D. G. Holah, A. N. Hughes, and B. C. Hui, 3714.
- Hughes, C. G.**
The chlorination of pyrroles. Part III. D. G. Durham, C. G. Hughes, and A. H. Rees, 3223.
- Hui, B. C.**
Reactions of 1,2,5-triphenylphosphole and its oxide, sulfide, and selenide with some transition metal halides. D. Budd, R. Chuchman, D. G. Holah, A. N. Hughes, and B. C. Hui, 1008.
Rhodium(I) complexes of 1,2,5-triphenylphosphole oxide. D. G. Holah, A. N. Hughes, and B. C. Hui, 2442.
Rhodium(I) and (III) complexes of some phospholes and their behavior as homogeneous hydrogenation catalysts. D. G. Holah, A. N. Hughes, and B. C. Hui, 3714.
- Hunter, D. H.**
2,4-Diazapentadienes. I. Prototropy, cyclization, and addition-elimination. D. H. Hunter and S. K. Kim, 669.
2,4-Diazapentadienes. II. A carbanion cyclization. D. H. Hunter and S. K. Kim, 678.
- Hunter, R. G.**
Hydroxy complexes of platinum(II) and palladium(II). G. W. Bushnell, K. R. Dixon, R. G. Hunter, and J. J. McFarland, 3694.
- Husson, E.**
Etude des oxynitrates de plomb. I. Synthèse des oxynitrates de plomb hydratés et de l'oxyde de plomb anhydre ou hydraté. H. Brusset, J. J. P. Martin, C. Martin-Lefevre, Y. Repelin, E. Husson et B. Despagne, 184.
- Hutton, H. M.**
Proton magnetic resonance spectrum of 1-penten-3-yne. INDO and CNDO/2 molecular orbital calculations on long-range spin-spin coupling constants in enynes. L. Ernst, H. M. Hutton, and T. Schaefer, 1863.
- Hyne, J. B.**
Effect of pressure on the solvolysis of dimethyl-*t*-butyl sulfonium iodide in ethanol-water mixtures. C. S. Davis and J. B. Hyne, 2270.
- Ibbott, D. G.**
Fluorine and proton nuclear magnetic resonance spectra of *N*-dialkylaminosulfur trifluorides. D. G. Ibbott and A. F. Janzen, 2428.
- Imagawa, T.**
Synthesis and structural investigation of *cis*-8-oxabicyclo[4.3.0]nonan-3-ols. K. Kimoto, T.-Y. Leong, T. Imagawa, and M. Kawanisi, 3805.
- Inel, Y.**
Primary processes in the vacuum ultraviolet photolysis of ethyl fluoride at 147 nm. S. C. Chan, Y. Inel, and E. Tschuikow-Roux, 1443.
- Inglefield, P. T.**
Hindered rotation in carbamates: a kinetic anomaly. P. T. Inglefield and S. Kaplan, 1594.

- Ingold, K. U.**
Absolute rate constants for hydrocarbon autoxidation. XXI. Activation energies for propagation and the correlation of propagation rate constants with carbon-hydrogen bond strengths. S. Korcek, J. H. B. Chenier, J. A. Howard, and K. U. Ingold, 2285.
- Irish, D. E.**
Ion pair formation in $\text{NaNO}_3/\text{D}_2\text{O}$ solutions: Raman and infrared spectra, partial molal volumes, conductance, and viscosity. J. D. Riddell, D. J. Lockwood, and D. E. Irish, 2951.
- Itakura, K.**
A novel phosphate protecting group for oligonucleotide synthesis. R. H. Wightman, S. A. Narang, and K. Itakura, 456.
A simplification in the synthesis of deoxyribooligonucleotides. S. A. Narang, K. Itakura, and R. H. Wightman, 769.
- Itô, S.**
The structure and stereochemistry of hydroxyachillin. F. W. Bachelor, A. B. Paralikar, and S. Itô, 333.
- Iwacha, D.**
Thermal rearrangement of acyl groups in anhydronucleosides. A convenient synthesis of 5'-O-acetylanhydrouridine. K. K. Ogilvie, J. B. Westmore, G. Taylor, D. Lin, D. Iwacha, H. Wayborn, and G. E. Dunn, 2365.
- Iwanow, A.**
The structure of nupharolutine, an alkaloid of *Nuphar luteum*. J. T. Wróbel, A. Iwanow, C. Brackman-Danheux, T. I. Martin, and D. B. MacLean, 1831.
Neothioinupharidine sulfoxide, a new alkaloid of *Nuphar luteum*. J. T. Wróbel, A. Iwanow, J. Szychowski, J. Poplawski, C. K. Yu, T. I. Martin, and D. B. MacLean, 1968.
- Jackson, A. W.**
Fluorescence and phosphorescence of 2,3-pentanedione. A. W. Jackson and A. J. Yarwood, 1331.
Emission and deactivation of the excited states of 2,3-pentanedione. A. W. Jackson and A. J. Yarwood, 1338.
- Jacobs, P. W. M.**
Electrical conductivity of pure and doped ammonium perchlorate crystals. P. W. M. Jacobs, F. E. Lovatt, and W. L. Ng, 3154.
- Jacobs, W. J.**
The kinetics of the insertion reaction of tin(II) chloride with a mono-substituted derivative of cyclopentadienyliron dicarbonyl dimer. P. F. Barrett and W. J. Jacobs, 972.
- Jafry, S. W. S.**
Cycloaddition and related reactions of some unsaturated phosphines with dimethyl acetylenedicarboxylate. M. Davies, A. N. Hughes, and S. W. S. Jafry, 3625.
- James, B. R.**
An e.s.r. study of a rhodium(I) molecular oxygen complex in solution. B. R. James, F. T. T. Ng, and E. Ochiai, 590.
Reactions of ethylene with rhodium(III) chloride. Part III. The catalytic oxidation of ethylene to acetaldehyde in aqueous hydrochloric acid solutions containing pentachloroaurate(III). B. R. James and M. Kastner, 1698.
Reactions of ethylene with rhodium(III) chloride. Part IV. Relative activity of tetra-, penta-, and hexachlororhodate(III) complexes for the oxidation of ethylene to acetaldehyde in aqueous acid solutions. B. R. James and M. Kastner, 1708.
- James, M. N. G.**
The molecular and crystal structure of an oxindole alkaloid (6-hydroxy-2'-(2-methylpropyl)-3,3'-spiro-tetra-hydropyrrolidino-oxindole). M. N. G. James and G. J. B. Williams, 2407.
- Jamieson, W. D.**
Mass spectra of some tropolones and tropolone methyl ethers. J. L. C. Wright, W. D. Jamieson, S. Safe, and L. C. Vining, 821.
- Jankowski, K.**
Erratum: Isomérisation des époxydes. K. Jankowski et J.-Y. Daigle, 455.
Spectroscopie de masse des *gem*-diesters cycliques. Fragment anhydride. K. Jankowski, J. Couturier et J.-Y. Daigle, 1535.
Spectroscopie de masse des *gem*-diesters épimères. K. Jankowski, J. Couturier et R. Tower, 1539.
Isomérisation des épisulfures. K. Jankowski et R. Harvey, 3930.
- Janzen, A. F.**
Mechanism of alcohol to ester rearrangement in phosphorus compounds. A. F. Janzen and T. G. Smyrl, 1205.
Fluorine and proton nuclear magnetic resonance spectra of *N*-dialkylaminosulfur trifluorides. D. G. Ibbott and A. F. Janzen, 2428.
Nuclear magnetic resonance study of base-catalyzed hydrolysis of trimethylfluorosilane. J. A. Gibson and A. F. Janzen, 3087.
- Jarczewski, A.**
Kinetics of proton transfer reactions of carbon acids. II. Reaction of di-(4-nitrophenyl)methane with alkoxide bases. A. Jarczewski and K. T. Leffek, 24.
- Jay, E. W. K.**
The synthesis of delphinine: a stereoselective total synthesis of an optically active advanced relay compound. K. Wiesner, E. W. K. Jay, T. Y. R. Tsai, C. Demerson, L. Jay, T. Kanno, J. Křepinský, A. Vilim, and C. S. Wu, 1925.
- Jay, L.**
The synthesis of delphinine: a stereoselective total synthesis of an optically active advanced relay compound. K. Wiesner, E. W. K. Jay, T. Y. R. Tsai, C. Demerson, L. Jay, T. Kanno, J. Křepinský, A. Vilim, and C. S. Wu, 1925.

Jeffery, W. K.

Synthesis and stereochemistry of diastereoisomeric 1,3-dimethylpiperidin-4-ols and related compounds. A. F. Casy and W. K. Jeffery, 803.

Jerumanis, S.

Réaction du sulfure de bore avec quelques composés difonctionnels. S. Jerumanis, P. A. Begin et D. Vu Cong, 1675.

Jha, K. N.

Solvent structure effects and diffusion control in the reaction between solvated electrons and solvated protons in alcohols and water. K. N. Jha, G. L. Bolton, and G. R. Freeman, 3073.

Johnson, D. W.

The preparation, properties, and some complexes of anhydrous manganese(III) nitrate. D. W. Johnson and D. Sutton, 3326.

The crystal and molecular structure of trinitrato-2,2'-bipyridylmanganese (III): a complex with three distinctly different nitrate ligands. F. W. B. Einstein, D. W. Johnson, and D. Sutton, 3332.

Johnson, L. F.

The ^{13}C Fourier transform spectrum of heparin. Evidence for a biose repeating sequence of residue. A. S. Perlin, N. M. K. N. Y. Kin, S. S. Battacharjee, and L. F. Johnson, 2437.

Johnson, R. P.

The pyrolysis of tetramethyltin. R. P. Johnson and S. J. W. Price, 50.

Johnston, H. K.

Terpolymerization of methacrylonitrile, styrene, and α -methylstyrene. A. Rudin, S. S. M. Chiang, H. K. Johnston, and P. D. Paulin, 1757.

Johnstone, J. J.

An ^{129}I Mössbauer study of novel polyhalogen ions formed by radioactive decay in the tellurium halides. J. J. Johnstone, C. H. W. Jones, and P. Vasudev, 3037.

Jolicœur, C.

A comparative study of Bu_4NBr , NaBPh_4 , Ph_4PCl , and Ph_4AsCl in water and methanol at 25 °C: partial molal volumes, heat capacities, and viscosities. C. Jolicœur, P. R. Philip, G. Perron, P. A. Leduc, and J. E. Desnoyers, 3167.

Jones, C. H. W.

An ^{129}I Mössbauer study of novel polyhalogen ions formed by radioactive decay in the tellurium halides. J. J. Johnstone, C. H. W. Jones, and P. Vasudev, 3037.

The ^{125}Te Mössbauer absorption spectra of the thiourea, ethylenethiourea, and tetramethylthiourea derivatives of tellurium(II) and tellurium(IV). B. M. Cheyne, C. H. W. Jones, and P. Vasudev, 3677.

Jones, J. B.

Steroids and steroidases. XIII. Illustrations of the potential of lithiodithiane-epoxide reactions for the stereospecific introduction of substituents into the steroid nucleus. J. B. Jones and R. Grayshan, 810.

Steroids and steroidases. XIV. Studies on the reactions of 2-lithio-1,3-dithianes with steroids possessing spiroepoxide functions at C-3. J. B. Jones and R. Grayshan, 1407.

Steroids and steroidases. XV. Investigations of some 2-lithio-1,3-dithiane reactions directed towards the introduction of corticoid and related functions at C-17 of the steroid nucleus. J. B. Jones and R. Grayshan, 1414.

Evaluation of some of the factors involved in the selective hydrolysis of aromatic ester protecting groups by α -chymotrypsin. J. B. Jones and Y. Y. Lin, 2053.

Steroids and steroidases. XVI. An evaluation of synthetic routes to variously C-17-substituted Δ^5 -3-ketosteroids. J. B. Jones and K. D. Gordon, 2712.

Jones W. E.

The relative rates of the reaction of active nitrogen with perfluoro-olefins and perfluorobutylene-2. M. Rujimhabhas and W. E. Jones, 346.

Mechanistic information on the aquations of complexes of the pentaamminecobalt(III) series from kinetic studies at high pressures. W. E. Jones, L. R. Carey, and T. W. Swaddle, 2739.

Joseph-Nathan, P.

Doubling proton magnetic resonance signals by use of tris(dipivalomethanato)europium(III). P. Joseph-Nathan, J. E. Herz, and V. M. Rodriguez, 2788.

Kabiruddin, S. K.

Synthesis and ion exchange properties of thermally stable titanium(IV) vanadate: separation of Sr^{2+} from Ca^{2+} , Ba^{2+} , and Mg^{2+} . M. Qureshi, K. G. Varsheny, and S. K. Kabiruddin, 2071.

Kadai, T.

Solvolysis of substituted nortricyclanes and norbornenes at 250°. H. Werstiuk and T. Kadai, 3350.

Kahn, S. M.

Aqueous reactions of sparingly soluble tellurites. I. Silver tellurite. M. C. Mehra and S. M. Kahn, 1778.

Kalos, F.

Intermolecular potentials from differential cross sections: $\text{Ar} + \text{Ar}$. F. Kalos and A. E. Grosser, 892.

Kalra, B. L.

Photosensitization by $\text{Cd}(\text{P}_1)$ atoms. II. Gas phase decomposition of cyclohexane. B. L. Kalra and A. R. Knight, 2010.

- Kane-Maguire, N. A. P.**
Partial photoresolution of some chromium(III) complexes of phenanthroline and bipyridine using circularly polarized laser irradiation. N. A. P. Kane-Maguire and C. H. Langford, 3381.
- Kannengiesser, G.**
Sulfur-free penicillin derivatives. I. Functionalization at C5. S. Wolfe, W. S. Lee, G. Kannengiesser, and J.-B. Ducep, 2894.
Sulfur-free penicillin derivatives. II. Functionalization of the methyl groups. S. Wolfe, W. S. Lee, J.-B. Ducep, and G. Kannengiesser, 2898.
Sulfur-free penicillin derivatives. III. Regeneration of fused β -lactams via intramolecular displacement. S. Wolfe, J.-B. Ducep, G. Kannengiesser, and W. S. Lee, 2902.
- Kanno, T.**
The synthesis of delphinine: a stereoselective total synthesis of an optically active advanced relay compound. K. Wiesner, E. W. K. Jay, T. Y. R. Tsai, C. Demerson, L. Jay, T. Kanno, J. Křepinský, A. Vilim, and C. S. Wu, 1925.
- Kaplan, S.**
Hindered rotation in carbamates: A kinetic anomaly. P. T. Inglefield and S. Kaplan, 1594.
- Kartzmark, E. M.**
Conductances, densities, and viscosities of solutions of sodium nitrate in water and in dioxane-water, at 20 °C. E. M. Kartzmark, 2845.
- Kastner, M.**
Reactions of ethylene with rhodium(III) chloride. Part III. The catalytic oxidation of ethylene to acetaldehyde in aqueous hydrochloric acid solutions containing pentachloroaquorhodate(III). B. R. James and M. Kastner, 1698.
Reactions of ethylene with rhodium(III) chloride. Part IV. Relative activity of tetra-, penta-, and hexachlororhodate(III) complexes for the oxidation of ethylene to acetaldehyde in aqueous acid solutions. B. R. James and M. Kastner, 1708.
- Kato, N.**
Reactivity of organic halides toward the mobile electron in methyltetrahydrofuran glass. N. Kato, K. Fueki, and Z. Kuri, 2702.
- Katon, J. E.**
Oriented polycrystal formation of halogen containing organic molecules on alkali halide windows and their usefulness in vibrational spectroscopic studies. J. E. Katon, D. Sinha, M. G. Griffin, and D. A. Condit, 3255.
- Katib, A.**
Photoelectron spectra of some bromoethylenes and 2-bromopropene. D. Chadwick, D. C. Frost, A. Katib, C. A. McDowell, and R. A. N. McLean, 2642.
- Kawanisi, M.**
Synthesis and structural investigation of *cis*-8-oxabicyclo[4.3.0]nonan-3-ols. K. Kimoto, T.-Y. Leong, T. Imagawa, and M. Kawanisi, 3805.
- Kayser, R. H.**
Substituent effects in dye-sensitized photooxidation reactions of furans. R. H. Young, R. L. Martin, N. Chinh, C. Mallon, and R. H. Kayser, 932.
- Kebarle, P.**
Kinetics and rate constants of reactions leading to hydration of NO_2^- and NO_3^- in gaseous oxygen, argon, and helium containing traces of water. J. D. Payzant, A. J. Cunningham, and P. Kebarle, 2230.
- Kelly, R. B.**
A total synthesis of cadin-4,10(15)-dien-3 α -ol: structure of khusinol. R. B. Kelly and J. Eber, 3272.
Total synthesis of (\pm)-ishwarane, a tetracyclic sesquiterpenoid. R. B. Kelly, J. Zamecnik, and B. A. Beckett, 3455.
- Kemper, G.**
The crystal structure of potassium hydrogeniodate (V), $\text{KIO}_3 \cdot \text{HIO}_3$. G. Kemper, A. Vos, and H. M. Rietveld, 1134.
- Kennedy, B. P.**
Studies of the metal-sulfur bond. Complexes of the pyridine thiols. B. P. Kennedy and A. B. P. Lever, 3488.
- Kennedy, M. B.**
The magnetic susceptibilities of some oxyhalide ions. M. B. Kennedy and M. W. Lister, 2155.
- Kenney-Wallace, G. A.**
A transient intermediate in the bimolecular reaction of hydrated electrons. N. Basco, G. A. Kenney-Wallace, S. K. Vidyarthi, and D. C. Walker, 2059.
- Kerby, R. C.**
Electrical conduction properties of liquid vanadates. I. Vanadium pentoxide. R. C. Kerby and J. R. Wilson, 2865.
Electrical conduction properties of liquid vanadates. II. The sodium vanadates. R. C. Kerby and J. R. Wilson, 2871.
Electrical conduction properties of liquid vanadates. III. The system $\text{V}_2\text{O}_5\text{-Na}_2\text{O-Fe}_2\text{O}_3$. R. C. Kerby and J. R. Wilson, 2877.
- Kerur, D. R.**
Reactions of ozonides. IX. A radioisotopic dilution study of ozonide methanolysis. D. R. Kerur and D. G. M. Diaper, 4029.
- Kewley, R.**
Electron spin resonance of γ -irradiated taurine. G. Lind and R. Kewley, 43.

- Erratum: Microwave spectrum and conformation of tetrahydropyran. V. M. Rao and R. Kewley, 955.
Erratum: Microwave spectrum of morpholine. J. J. Sloan and R. Kewley, 955.
Microwave spectrum of 1,3-dioxane. R. Kewley, 1690.
- Khan, G. M.**
The adsorption of alkylchlorosilanes on quartz crystal surfaces. G. M. Khan, 125.
- Khan, M. A.**
An X-ray structure determination of the twinned crystals of dinitrato-2,2'-dipyridylsilver(II). G. W. Bushnell and M. A. Khan, 315.
- Kidd, R. G.**
The investigation of cation-anion interactions by ^{39}K nuclear magnetic resonance. E. G. Bloor and R. G. Kidd, 3926.
- Kiefer, W.**
Vapor phase Raman transitions in the CH_2 scissoring region and the ring puckering vibration of trimethylene oxide and some deuterated analogs. H. Wieser, M. Danyluk, W. Kiefer, and H. J. Bernstein, 2771.
- Kiehlmann, E.**
Novel rearrangement during alkaline hydrolysis of 1,1,1-trichloro-2-alken-4-ones. E. Kiehlmann, B. C. Menon, and J. I. Wells, 2561.
- Kim, Y. C.**
Possible intermediates in the biosynthesis of porphyrins. J. M. Osgerby, J. Pluscec, Y. C. Kim, F. Boyer, N. Stojanac, H. D. Mah, and S. F. MacDonald, 2652.
- Kimoto, K.**
Synthesis and structural investigation of *cis*-8-oxabicyclo[4.3.0]nonan-3-ols. K. Kimoto, T.-Y. Leong, T. Imagawa, and M. Kawanisi, 3805.
- Kin, N. M. K. N. Y.**
The ^{13}C Fourier transform spectrum of heparin. Evidence for a biose repeating sequence of residue. A. S. Perlin, N. M. K. N. Y. Kin, S. S. Bhattacharjee, and L. F. Johnson, 2437.
- King, Jr., A. D.**
Second cross virial coefficients of carbon tetrachloride-gas mixtures determined by solubility measurements at high pressures. S. K. Gupta and A. D. King, Jr., 660.
- King, J. F.**
Organic sulfur mechanisms, 12. Reaction of sulfoxes with triphenylphosphine. J. F. King, E. G. Lewars, and L. J. Danks, 866.
- Klassen, N. V.**
Pulse radiolysis of aqueous papain. J. R. Clement, D. A. Armstrong, N. V. Klassen, and H. A. Gillis, 2833.
- Klötzer, W.**
A new synthesis of "Schöpf's base VI" and related 10*H*-isoindolo[2,3-*c*]benzazepines. S. Teitel, W. Klötzer, J. Borgese, and A. Brossi, 2022.
- Klutsch, G.**
Quantitative investigation of the ozonolysis reaction. XVII. Relative reaction rates for the ozone attack on phenylethylenes. G. Klutsch and S. Fliszár, 2841.
- Knight, A. R.**
Reactions of thiyl radicals. VII. Photolysis of methyl sulfide vapor. P. M. Rao and A. R. Knight, 844.
Reactions of thiyl radicals. VIII. Photolysis of methyl ethyl sulfide vapor. D. R. Tycholiz and A. R. Knight, 1734.
Photosensitization by $\text{Cd} (^3\text{P}_1)$ atoms. II. Gas phase decomposition of cyclohexane. B. L. Kalra and A. R. Knight, 2010.
Direct photolysis of 2-propanol vapor. O. S. Herasymowych and A. R. Knight, 2217.
- Knittel, P.**
Oxidation of semicarbazones of ketones. Improved synthesis of Δ^3 -1,3,4-oxadiazolin-2-ones. P. Knittel, S. L. Lee, and J. Warkentin, 3248.
Oxidation of *p*-dimethylaminobenzaldehyde semicarbazone. Novel conversion of an aromatic aldehyde to an aroyl cyanide. P. Knittel and J. Warkentin, 4066.
- Knop, O.**
Pyrochlores. VII. The oxides of antimony: an X-ray and Mössbauer study. D. J. Stewart, O. Knop, C. Ayasse, and F. W. D. Woodhams, 690.
Pyrochlores. VIII. Studies of some 2-5 pyrochlores and related compounds and minerals. F. Brisse, D. J. Stewart, V. Seidl, and O. Knop, 3648.
- Ko, E. C. F.**
The mechanism for hydrolysis of primary alkyl chlorosulfates in water. The kinetic solvent isotope effect and the secondary deuterium isotope effect. E. C. F. Ko and R. E. Robertson, 434.
Hydrolysis of sulfamoyl chlorides. II. Hydrogen participation in the hydrolysis of diethyl and methylethylsulfamoyl chlorides. E. C. F. Ko and R. E. Robertson, 946.
Studies on the decomposition of tetra-alkylammonium salts in solution. V. Rates and activation parameters of salts containing substituted-benzyl or other active groups. E. C. F. Ko and K. T. Leffek, 1297.
- Koeberg-Telder, A.**
Sulfonation and isomerization of some halogenobenzenesulfonic acids. H. Cerfontain, A. Koeberg-Telder, and W. A. Z. Voorspuy, 1574.

- Kong, P. C.**
Zeise's salt, $\text{K}[\text{Pt}(\text{C}_2\text{H}_4)\text{Cl}_3]$ anhydrous and monohydrate and the platinum-olefin interaction. J. Hulbert, P. C. Kong, F. D. Rochon, and T. Theophanides, 1596.
- Kopecky, K. R.**
Deuterium isotope effects in the oxidation of 2,3-dimethyl-2-butene via the bromohydroperoxide, by singlet oxygen and by triphenyl phosphite ozonide. K. R. Kopecky and J. H. van de Sande, 4034.
- Korcek, S.**
Absolute rate constants for hydrocarbon autoxidation. XXI. Activation energies for propagation and the correlation of propagation rate constants with carbon-hydrogen bond strengths. S. Korcek, J. H. B. Chenier, J. A. Howard, and K. U. Ingold, 2285.
- Kotowycz, G.**
Self association of folic acid in aqueous solution by proton magnetic resonance. Y.-F. Lam and G. Kotowycz, 2357.
- Krech, M.**
Determination of the heat of formation of hexafluorobenzene. M. Krech, S. J. W. Price, and W. F. Yared, 2935.
- Křepinský, J.**
The synthesis of delphinine: a stereoselective total synthesis of an optically active advanced relay compound. K. Wiesner, E. W. K. Jay, T. Y. R. Tsai, C. Demerson, L. Jay, T. Kanno, J. Křepinský, A. Vilim, and C. S. Wu, 1925.
- Kroeker, K.**
Synthesis of oligothymidylates on an insoluble polymer support. K. K. Ogilvie and K. Kroeker, 1211.
- Kruus, P.**
Cavitation-induced reactions in pure substituted benzenes. G. K. Diedrich, P. Kruus, and L. M. Rachlis, 1743.
- Kubela, R.**
A stereospecific synthesis of ring A-aromatic steroids. R. A. Dickinson, R. Kubela, G. A. MacAlpine, Z. Stojanac, and Z. Valenta, 2377.
Spectrofluorometric studies. XI. Some aspects of the photochemistry of ortho-fused benzocycloalkenes. M. Grossman, R. Kubela, G. P. Semeluk, and I. Unger, 3298.
- Kündig, P.**
Matrix infrared and Raman spectroscopic evidence for $\text{Pd}(\text{N}_2)_3$ in solid nitrogen. G. A. Ozin, M. Moskovits, P. Kündig, and H. Huber, 2385.
Intermediate binary carbonyls of palladium $\text{Pd}(\text{CO})_n$, where $n = 1-3$; preparation, identification, and diffusion kinetics by matrix isolation infrared spectroscopy. P. Kündig, M. Moskovits, and G. A. Ozin, 3587.
- Kuri, Z.**
Optical and thermal bleaching of trapped electrons in aliphatic amine glasses. S. Noda, K. Fueki, and Z. Kuri, 2699.
Reactivity of organic halides toward the mobile electron in methyltetrahydrofuran glass. N. Kato, K. Fueki, and Z. Kuri, 2702.
- Labib, N. I.**
The master equation for the dissociation of a dilute diatomic gas. VII. Vibration-dissociation coupling in an expansion nozzle. N. I. Labib, D. L. S. McElwain, and H. O. Pritchard, 3832.
- Lacasse, G.**
Five-membered heterocyclic thiones. Part II. Oxazole-2-thione. G. Lacasse and J. M. Muchowski, 3082.
- Laidler, K. J.**
Kinetics of the mercury-photosensitized decomposition of neopentane. Part I. The overall mechanism. E. Furimsky and K. J. Laidler, 1115.
Kinetics of the mercury-photosensitized decomposition of neopentane. Part II. Reactions of the methyl and neopentyl radicals. E. Furimsky and K. J. Laidler, 1123.
Kinetics of the mercury-photosensitized decomposition of neopentane. Part III. The secondary reactions. E. Furimsky and K. J. Laidler, 1129.
Non-steady-state kinetics for a double-intermediate enzyme mechanism: the case of high enzyme concentrations. N. H. Hijazi and K. J. Laidler, 1440.
- Lal, D.**
Equilibrium dissociation pressures of NbBr_3 over NbBr_4 . A. D. Westland and D. Lal, 1604.
- Lalancette, J.-M.**
Metals intercalated in graphite. I. Reduction and oxidation. J.-M. Lalancette, G. Rollin, and P. Dumas, 3058.
- Lalor, G. C.**
Isotope effects and hydrogen yields in the radiolysis of $\text{H}_2\text{O}-\text{D}_2\text{O}$ mixtures at very high dose rates. A. W. Boyd, C. Willis, and G. C. Lalor, 83.
- Lam, L. K. M.**
The pyrolysis of some neopentyl xanthates: a competitive formation of olefins and dithiolcarbonate. K. G. Rutherford, B. K. Tang, L. K. M. Lam, and D. P. C. Fung, 3288.
- Lam, S. Y.**
Phase diagrams of sodium chloride and of potassium chloride in water-dioxane. A. N. Campbell and S. Y. Lam, 3388.
- Lam, Y.-F.**
Self association of folic acid in aqueous solution by proton magnetic resonance. Y.-F. Lam and G. Kotowycz, 2357.

- Lamartine, R.**
Etude de la réaction gaz-solide organique entre l'isobutène et le paraphénylphénol. R. Lamartine et R. Perrin, 2882.
- Langford, C. H.**
Photolysis of ammine and alkylamine chromium(III) complexes in water and dimethylsulfoxide: mechanistic evidence from luminescence and medium effects. C. H. Langford and L. Tipping, 887.
Partial photoresolution of some chromium(III) complexes of phenanthroline and bipyridine using circularly polarized laser irradiation. N. A. P. Kane-Maguire and C. H. Langford, 3381.
- L'Anglais, D.**
Optical activities of two steroids containing a chiral cyclopentene ring. J. T. Edward, N. E. Lawson, and D. L'Anglais, 766.
- Langlois, J. R.**
Use of *N*-carboxyanhydrides in the synthesis of dipeptides. The improvement of isolated yields by the facile removal of buffer components. R. J. Gait, J. R. Langlois, and R. E. Williams, 299.
- Lapouyade, R.**
The photocyclization of aromatic thioketones. R. Lapouyade and P. de Mayo, 4068.
- Larson, D. W.**
3-Ketoglutarates: compounds with Mn(II), Co(II), Ni(II), Cu(II), Zn(II), Mg, and Na. F. W. Yerhoff and D. W. Larson, 826.
- Lau, M. P.**
Photoreactions of nitroso compounds in solution. XX. Photoreduction, photoelimination, and photoaddition of nitrosamines. Y. L. Chow, M. P. Lau, R. A. Perry, and J. N. S. Tam, 1044.
- Lawson, N. E.**
Optical activities of two steroids containing a chiral cyclopentene ring. J. T. Edward, N. E. Lawson, and D. L'Anglais, 766.
- Layton, R. B.**
A convenient synthesis of propargylic esters and γ -keto esters. The reaction of trialkynylboranes with ethyl diazoacetate, and the unidirectional hydration of propargylic esters. J. Hooz and R. B. Layton, 1105.
- LeBelle, M. J.**
Metallation of *N*-substituted β -lactams. A method for the introduction of 3-substituents into β -lactams. T. Durst and M. J. LeBelle, 3196.
- LeBlanc, R. J.**
Synthesis and reactions of 1-alkyl-3-(*o*-carbalkoxyphenyl)-triazenes. R. J. LeBlanc and K. Vaughan, 2544.
- Leblanc, R. M.**
Nature de la luminescence de la colchicine. H. Roigt et R. M. Leblanc, 1959.
- Lecoq, J. C.**
Chaleurs de mélange du système ethyl-3 pentanol-3 tetrachlorure de carbone. H. Brusset, M. Desgranges et J. C. Lecoq, 3207.
- Lecourt, M. J.**
A nuclear magnetic resonance study of some 4-X-substituted-2,6-dinitroanisoles and related Meisenheimer 1,3- and 1,1-complexes. M. P. Simonnin, M. J. Lecourt, F. Terrier, and C. A. Dearing, 3558.
- Leduc, P. A.**
A comparative study of Bu_4NBr , NaBPh_4 , Ph_4PCl , and Ph_4AsCl in water and methanol at 25 °C: partial molal volumes, heat capacities, and viscosities. C. Jolicoeur, P. R. Philip, G. Perron, P. A. Leduc, and J. E. Desnoyers, 3167.
- Lee, C. C.**
Rearrangement studies with ^{14}C . XXXV. The absence of isotopic scrambling in the photolysis of 2- ^{14}C -3-phenylpropionaldehyde. C. C. Lee and D. Unger, 593.
Rearrangement studies with ^{14}C . XXXVI. Solvolysis of 1- ^{14}C -2-phenylethyl tosylate in aqueous acetic acid with or without added sodium azide. C. C. Lee, D. Unger, and S. Vassie, 1371.
Rearrangement studies with ^{14}C . XXXVII. The treatment of 1- ^{14}C -1-chlorobutane with aluminum chloride. C. C. Lee and I. Y. Zea Ponce, 3179.
- Lee, D. G.**
The basicity of aliphatic ethers. D. G. Lee and R. Cameron, 445.
The oxidation of 2-propanol by ruthenium tetroxide. D. G. Lee and M. van den Engh, 2000.
The oxidation of tetrahydrofuran by ruthenium tetroxide. D. G. Lee and M. van den Engh, 3129.
The oxidation of organic compounds by sodium ruthenate. D. G. Lee, D. T. Hall, and J. H. Cleland, 3741.
- Lee, G. K. J.**
Kinetics and mechanism of decarboxylation of some pyridinecarboxylic acids in aqueous solution. G. E. Dunn, G. K. J. Lee, and H. Thimm, 3017.
- Lee, S. L.**
Thermolysis of Δ^3 -1,3,4-oxadiazolin-2-ones. S. L. Lee, A. M. Cameron, and J. Warkentin, 2326.
Oxidation of semicarbazones of ketones. Improved synthesis of Δ^3 -1,3,4-oxadiazolin-2-ones. P. Knittel, S. L. Lee, and J. Warkentin, 3248.
- Lee, W.**
Absorption of Co^{2+} by oxides from aqueous solution. P. H. Tewari, A. B. Campbell, and W. Lee, 1642.

- Lee, W. S.**
Sulfur-free penicillin derivatives. I. Functionalization at C5. S. Wolfe, W. S. Lee, G. Kannengiesser, and J.-B. Ducep, 2894.
Sulfur-free penicillin derivatives. II. Functionalization of the methyl groups. S. Wolfe, W. S. Lee, J.-B. Ducep, and G. Kannengiesser, 2898.
Sulfur-free penicillin derivatives. III. Regeneration of fused β -lactams via intramolecular displacement. S. Wolfe, J.-B. Ducep, G. Kannengiesser, and W. S. Lee, 2902.
- Lee-Ruff, E.**
Acid-catalyzed reactions of cyclobutanones. II. Generation of acylium ions from β,γ -unsaturated cyclobutanones. E. Lee-Ruff, 952.
- Leffek, K. T.**
Kinetics of proton transfer reactions of carbon acids. II. Reaction of di-(4-nitrophenyl)methane with alkoxide bases. A. Jarczewski and K. T. Leffek, 24.
Secondary kinetic isotope effects in bimolecular nucleophilic substitutions. V. The role of the solvent in the reaction between methyl iodide and pyridine. K. T. Leffek and A. F. Matheson, 982.
Secondary kinetic isotope effects in bimolecular nucleophilic substitutions. VI. Effect of α and β deuteration of alkyl halides in their Menshutkin reactions with pyridine in nitrobenzene. K. T. Leffek and A. F. Matheson, 986.
Studies on the decomposition of tetra-alkylammonium salts in solution. V. Rates and activation parameters of salts containing substituted-benzyl or other active groups. E. C. F. Ko and K. T. Leffek, 1297.
- Legay, D.**
Etude des mouvements de molécules linéaires en phase liquide par analyse du profil des bandes d'absorption infrarouge. II. Bande γ_3 du sulfure de carbonyle. A. M. Bize, J. Soussen-Jacob, J. Vincent-Geisse, D. Legay et J. P. Perchard, 217.
- Leh, F.**
Organic free radical and metal complexes. 2,2-Diphenyl-1-picrylhydrazyl with Cu(I). F. Leh and J. K. S. Wan, 999.
- Lemaire, D.**
Etude spectroscopique des dérivés du peroxyde d'hydrogène. V. Les percarbonates KHCO_4 et $\text{K}_2\text{C}_2\text{O}_6$. P. A. Giguère et D. Lemaire, 1472.
- Lemieux, R. U.**
Relationship of ^{13}C to vicinal ^1H coupling to the torsion angle in uridine and related structures. R. U. Lemieux, T. L. Nagabhushan, and B. Paul, 773.
- Lemire, A. E.**
Nuclear magnetic resonance studies of some trimethyl tin carbamates. A. E. Lemire and J. C. Thompson, 1386.
- Lenoir, J. A.**
Hydrazine derivatives. I. Transcarbamylation reaction. J. A. Lenoir, L. D. Colebrooke, and D. F. Williams, 2661.
- Lenzi, F.**
An upper bound to the mole fraction of unbonded H_2O in liquid water at 25 °C. F. Lenzi, 1088.
A general relation between H_0 , acid concentration, and water activity for strong acids at moderate concentrations. T. T. Teng and F. Lenzi, 3283.
- Leonard, D. R. A.**
An addition reaction of indane with nitric acid in acetic anhydride. A. Fischer, C. C. Greig, A. L. Wilkinson, and D. R. A. Leonard, 2211.
Addition reactions in the nitration of some polycyclic aromatic compounds. A. Fischer and D. R. A. Leonard, 3367.
- Leonesi, D.**
Les équilibres solide-liquide dans des systèmes binaires formiate d'alcalin-formiate d'alcalino-terreux. G. Berchiesi, A. Cingolani, D. Leonesi et G. Piantoni, 1972.
- Leong, K. N.**
The effect of aromatic tertiary amines on the copper(II) catalyzed decarboxylation of 3-oxo-glutaric acid. K. N. Leong and M. W. Lister, 1461.
The effect of aromatic amines on the catalyzed decarboxylation of 3-oxo-glutaric acid. K. N. Leong and M. W. Lister, 3573.
- Leong, T.-Y.**
Synthesis and structural investigation of *cis*-8-oxabicyclo[4.3.0]nonan-3-ols. K. Kimoto, T.-Y. Leong, T. Imagawa, and M. Kawanisi, 3805.
- LeRoy, D. J.**
Spin-orbit relaxation of $\text{Hg}(6^3\text{P}_1)$ by various gases. A. C. Vikis, G. Torrie, and D. J. LeRoy, 176.
The role of HgH in the $\text{Hg}(6^3\text{P}_0)$ photosensitized decomposition of the alkanes and hydrogen. A. C. Vikis and D. J. LeRoy, 595.
- Lessard, J.**
The Cotton effects of conjugated homoannular dienes. I. The non-generality of the rule of Moscovitz. J. Lessard, L. Ruest, and Ch. R. Engel, 1433.
- Letskeman, P.**
Metal-amino polycarboxylic acid complexes. IV. A polarographic study of lead(II) complexes with diethylenetriamine-pentaacetic acid in aqueous solution. P. Letkeman and J. B. Westmore, 3821.

Leung, F.

The crystal and molecular structure of two thiathiophthen nitrogen isosteres. F. Leung and S. C. Nyburg, 324.

Leung, K. Y.

The structure of $\text{Na}_4\text{P}_2\text{O}_7$ at 22 °C. K. Y. Leung and C. Calvo, 2519.

Lever, A. B. P.

Studies of the metal-sulfur bond. Complexes of the pyridine thiols. B. P. Kennedy and A. B. P. Lever, 3488.

Isotopic studies of the metal-ligand bond. Part I. Further spectroscopic studies of copper ethylenediamine complexes: copper-nitrogen vibrations. G. W. R. Canham and A. B. P. Lever, 3866.

Lewars, E. G.

Organic sulfur mechanisms. 12. Reaction of sulfenes with triphenylphosphine. J. F. King, E. G. Lewars, and L. J. Danks, 866.

cis-5-Cyclooctene-1,2-dione and its ethylene ketals. P. Yates, E. G. Lewars, and P. H. McCabe, 1548.

Leznoff, C. C.

Photocyclization reactions of aryl polyenes. V. Photochemical synthesis of substituted chrysenes. C. Leznoff and R. J. Hayward, 528.

The use of polymer supports in organic synthesis. The synthesis of monotrityl ethers of symmetrical diols. C. C. Leznoff and J. Y. Wong, 2892.

Liedtke, R. J.

Mass spectrometry in structural and stereochemical problems. CCXVII. Electron impact promoted fragmentation of *O*-methyl oximes of some α,β -unsaturated ketones and methyl substituted cyclohexanones. Y. M. Sheikh, R. J. Liedtke, A. M. Duffield, and C. Djerassi, 2776.

Liengme, B. V.

Preparation, Mössbauer, and vibrational spectra of some penta- and hexacoordinated addition compounds of dimethyl and diphenyltin(IV) dichloride. B. V. Liengme, R. S. Randall, and J. R. Sams, 3212.

Lilles, H.

A kinetic and electron spin resonance study of the polymerization of vinyl acetate retarded by 2,4,6-tri-*t*-butylphenol. H. Lilles, R. D. Parnell, and K. E. Russel, 3304.

Lin, C. S.

A semi-empirical analysis of the electronic spectrum and molecular structure of formaldehyde. I. Absar, C. S. Lin, and K. L. McEwen, 646.

Lin, D.

Synthesis of 8,2'-thioanhydroguanosine. K. K. Ogilvie, L. Slotin, J. B. Westmore, and D. Lin, 1100.

A general synthesis of 8,2'-thioanhydropurine nucleosides. K. K. Ogilvie, L. Slotin, J. B. Westmore, and D. Lin, 2249.

Thermal rearrangement of acyl groups in anhydronucleosides. A convenient synthesis of 5'-*O*-acetylanhydrouridine. K. K. Ogilvie, J. B. Westmore, G. Taylor, D. Lin, D. Iwacha, H. Wayborn, and G. E. Dunn, 2365.

Lin, D. C. K.

Synthesis of 8,3'-thioanhydroguanosine. K. K. Ogilvie, L. A. Slotin, D. C. K. Lin, and J. B. Westmore, 3276.

Lin, Y. Y.

Evaluation of some of the factors involved in the selective hydrolysis of aromatic ester protecting groups by α -chymotrypsin. J. B. Jones and Y. Y. Lin, 2053.

Lind, G.

Electron spin resonance of γ -irradiated taurine. G. Lind and R. Kewley, 43.

Linder, R. E.

Structure of radicals produced by gamma-radiolysis. Part 2. Radicals derived from 5-membered alicyclic molecules. R. E. Linder and A. C. Ling, 3982.

Ling, A. C.

Structure of radicals produced by gamma-radiolysis. Part 2. Radicals derived from 5-membered alicyclic molecules. R. E. Linder and A. C. Ling, 3982.

Linke, S.

An electron spin resonance examination of ferrocenylalkyl- and aryl ketals. G. Bigam, J. Hooz, S. Linke, R. E. D. McClung, M. W. Mosher, and D. D. Tanner, 1825.

Lister, M. W.

The effect of aromatic tertiary amines on the copper(II) catalysed decarboxylation of 3-oxo-glutaric acid. K. N. Leong and M. W. Lister, 1461.

The magnetic susceptibilities of some oxyhalide ions. M. B. Kennedy and M. W. Lister, 2155.

The effect of aromatic amines on the catalyzed decarboxylation of 3-oxo-glutaric acid. K. N. Leong and M. W. Lister, 3573.

Liu, C. S.

Reactions of unsaturated compounds with silicon difluoride. Part I. Acetylene. C. S. Liu, J. L. Margrave, J. C. Thompson, and P. L. Timms, 459.

Reactions of silicon difluoride with unsaturated organic compounds. Part II. Alkyl substituted alkynes. C. S. Liu, J. L. Margrave, and J. C. Thompson, 465.

Liu, H. J.

The photodecomposition of an analogue of DDT. H. J. Liu, P. J. Silk, and I. Unger, 55.

- Liu, H.-J.**
The alkaloids of *Ormosia semicastrata*: (–)-ormosanine, (+)-piptanthine, (–)-18-epiormosanine, and (–)-ormocastine. S. McLean, M. L. Roy, H.-J. Liu, and D. T. Chu, 1639.
- Liu, J. K.**
Thiohydantoin. IX. Tautomerism of some methylation products. J. T. Edward and J. K. Liu, 2423.
- Liu, M. T. H.**
Pyrolysis of 3-chloro-3-aryldiazirines, kinetics and mechanism. M. T. H. Liu and K. Toriyama, 3009.
- Lobo, S.**
Studies in solvolysis. Part V. Further investigations concerning the solvolysis of primary, secondary, and tertiary tri-fluoroacetates. D. J. Barnes, M. Cole, S. Lobo, J. G. Winter, and J. M. W. Scott, 2175.
- Lock, C. J. L.**
Studies of β -diketone complexes of rhenium I. Tris(pentane-2,4-dionato)rhenium(III) and tris(1,1,1,5,5,5-hexafluoropentane-2,4-dionato)rhenium(III). W. D. Courier, W. Forster, C. J. L. Lock, and G. Turner, 8.
Studies of β -diketone complexes of rhenium. Part II. Physical studies of dihalobis(pentane-2,4-dionato)rhenium(IV) compounds. W. D. Courier, C. J. L. Lock, and G. Turner, 1797.
Technetium chlorides and oxochlorides. A. Guest and C. J. L. Lock, 1807.
The preparation, physical properties, and structure of oxotetrachloroaquorhenium(IV), $\text{ReOCl}_4(\text{OH}_2)$. P. W. Fraiss and C. J. L. Lock, 1811.
The structure and physical properties of μ -oxo-bis-{oxo-trichloro(*O*-perphenylchloride)rhenium(VI)}, and the non-existence of β - ReOCl_3 . C. Calvo, P. W. Fraiss, and C. J. L. Lock, 3607.
- Lockwood, D. J.**
Ion pair formation in $\text{NaNO}_3/\text{D}_2\text{O}$ solutions: Raman and infrared spectra, partial molal volumes, conductance, and viscosity. J. D. Riddell, D. J. Lockwood, and D. E. Irish, 2951.
- Loewen, P. C.**
The influence of the 2-alkoxy group and of C-5 substituents on the direction of reductive cleavage of 2-alkoxytetrahydrofurans by AlH_2Cl in ether solution. P. C. Loewen, L. P. Makhubu, and R. K. Brown, 1502.
2-Aryloxytetrahydrofurans. Their reductive cleavage by ether solutions of AlH_2Cl and their cleavage and rearrangement by ether solutions of AlCl_3 . P. C. Loewen and R. K. Brown, 3639.
- Lossing, F. P.**
Free radicals by mass spectrometry. XLV. Ionization potentials and heats of formation of C_3H_3 , C_3H_5 , and C_4H_7 radicals and ions. F. P. Lossing, 3973.
- Loutfy, Rafik O.**
The triplet state of ketones in solution: quenching of triplet acetone by amines. R. W. Yip, R. O. Loutfy, Y. L. Chow, and L. K. Magdzinski, 3426.
Primary bond formation in the addition of cyclopentenone to chloroethylenes. R. O. Loutfy and P. de Mayo, 3465.
Correlation of π, π^* triplet energy of some cyclic α, β -unsaturated ketones with electroreduction potential. Rafik O. Loutfy and Raouf O. Loutfy, 4050.
Triplet charge transfer complex between excited electron acceptor and ground state electron donor. Rafik O. Loutfy and Raouf O. Loutfy, 4052.
- Loutfy, Raouf O.**
The electroreduction of substituted benzofurazans. W. R. Fawcett, P. A. Forte, R. O. Loutfy, and J. M. Prokipcak, 263.
Correlation of π, π^* triplet energy of some cyclic α, β -unsaturated ketones with electroreduction potential. Rafik O. Loutfy and Raouf O. Loutfy, 4050.
Triplet charge transfer complex between excited electron acceptor and ground state electron donor. Rafik O. Loutfy and Raouf O. Loutfy, 4052.
- Lovatt, F. E.**
Electrical conductivity of pure and doped ammonium perchlorate crystals. P. W. M. Jacobs, F. E. Lovatt, and W. L. Ng, 3154.
- Loveday, J. J.**
The effect of pressure on the rate of acetolysis of a charge-transfer complex. R. K. Williams, J. J. Loveday, and A. K. Colter, 1303.
- Lown, J. W.**
Reactions of tetrasubstituted azomethine ylides generated from tetracyanoethylene oxide. J. W. Lown and K. Matsumoto, 534.
Reaction of diphenylcyclopropenethione with pyridinium imines. J. W. Lown and K. Matsumoto, 584.
Thermal decomposition of stereoisomeric 3-aryloxy- and 3-carbomethoxyaziridines in acetonitrile. J. W. Lown and M. H. Akhtar, 2236.
- Lui, H.**
Thermolysis of γ -phenylazo- γ -valerolactone. H. Lui and J. Warkentin, 1767.
- Lura, R. D.**
Stereochemistry of the cycloaddition of singlet excited β -substituted styrenes to olefins. O. L. Chapman, R. D. Lura, R. M. Owens, E. D. Plank, S. C. Shim, D. R. Arnold, and L. B. Gillis, 1984.
- Lynch, T. R.**
The thermal decomposition of *N*-benzoyl-*N'*-1-cyanocyclohexyl diimide. T. R. Lynch and F. N. MacLachlan, 2143.

Lyon, R. K.

Search for the N-N₂ exchange reaction. R. K. Lyon, 1437.

MacAlpine, G. A.

A stereospecific synthesis of ring A-aromatic steroids. R. A. Dickinson, R. Kubela, G. A. MacAlpine, Z. Stojanac, and Z. Valenta, 2377.

Macaulay, S.

Approaches to the synthesis of triterpenoids. II. Some tetracyclic precursors suitable for conversion into pentacyclic triterpenoids. J. W. ApSimon, P. Baker, J. Buccini, J. W. Hooper, and S. Macaulay, 1944.

Macdonald, C. J.

An investigation of long-range proton-proton coupling constants in phenylacetylene derivatives. C. J. Macdonald, G. K. Hamer, I. R. Peat, and W. F. Reynolds, 2035.

MacDonald, H. H. J.

The racemization and geometrical isomerization of oxiranes. H. H. J. MacDonald and R. J. Crawford, 428.

MacDonald, M. C.

Sterically hindered aromatic compounds. III. Acid-catalyzed reactions of 2,4,6-tri-*t*-butyl- and 2-methyl-4,6-di-*t*-butylbenzyl alcohols and chlorides. L. R. C. Barclay, H. R. Sonawane, and M. C. MacDonald, 281.

MacDonald, R. R.

The preparation and acetolyses of 5-deuteriated *exo*-2-norbornyl-*p*-bromobenzenesulfonates. N. H. Werstiuk, R. R. MacDonald, R. W. Ouwehand, W. L. Chan, F. P. Cappelli, J. G. Ballard, R. E. Young, R. E. Massey, G. Timmins, I. Goodwin, A. Walling, and Y. Teruta, 618.

MacDonald, S. F.

Possible intermediates in the biosynthesis of porphyrins. J. M. Osgerby, J. Pluscec, Y. C. Kim, F. Boyer, N. Stojanac, H. D. Mah, and S. F. MacDonald, 2652.

Mackay, D.

Synthesis and isomerization of adducts of axodicarbonyl compounds and cyclopentadiene. J. A. Campbell, D. Mackay, and T. D. Sauer, 371.

The acid-catalyzed isomerization of the adducts of azodiacyls with cyclopentadiene and 1,3-cyclohexadiene. C. Y.-J. Chung, D. Mackay, and T. D. Sauer, 1568.

The effect of bridge size on the sigmatropic rearrangement of 2,3-dibenzoyl-2,3-diazabicyclo[2.2.*n*]alk-5-enes. C. Y.-J. Chung, D. Mackay, and T. D. Sauer, 3315.

Mackay, G. I.

Collisional deactivation rates of electronically excited molecular ions. II. G. I. Mackay and R. E. March, 1.

Collisional deactivation rates of electronically excited molecular ions. III. O₂⁺ (*b*⁴Σ_g⁻). G. I. MacKay, J. P. Anglesey, and R. E. March, 2516.

MacKay, W. D.

A synthetic study in the tricyclovetivene series. A. Deljac, W. D. MacKay, C. S. J. Pan, K. J. Wiesner, and K. Wiesner, 726.

Erratum: A synthetic study in the tricyclovetivene series. A. Deljac, W. D. MacKay, C. S. J. Pan, K. J. Wiesner, and K. Wiesner, 3933.

Mackie, D. M.

High stereoselectivity in the deuteration of a primary carbon L-threose-4-*d* (4S). A. Maradufu, D. M. Mackie, and A. S. Perlin, 2617.

MacLachlan, F. N.

The thermal decomposition of *N*-benzoyl-*N'*-1-cyanocyclohexyl diimide. T. R. Lynch and F. N. MacLachlan, 2143.

MacLean, D. B.

Cancentrine. II. The structure of cancentrine. R. Rodrigo, R. H. F. Manske, D. B. MacLean, L. Baczynskyj, and J. K. Saunders, 853.

Cancentrine. III. Dehydroderivatives. D. B. MacLean, L. Baczynskyj, R. Rodrigo, and R. H. F. Manske, 862.

The structure of nupharolutine, an alkaloid of *Nuphar luteum*. J. T. Wróbel, A. Iwanow, C. Braekman-Danheux, T. I. Martin, and D. B. MacLean, 1831.

Neothiobinupharidine sulfoxide, a new alkaloid of *Nuphar luteum*. J. T. Wróbel, A. Iwanow, J. Szychowski, J. Poplawski, C. K. Yu, T. I. Martin, and D. B. MacLean, 1968.

Biosynthesis of lycopodine. Pelletierine as an obligatory intermediate. J.-C. Braekman, R. N. Gupta, D. B. MacLean, and I. D. Spenser, 2591.

The synthesis of (±)-ochrobirine. A new route to the spirobenzylisoquinoline system. N. E. Cundasawmy and D. B. MacLean, 3028.

Cancentrine. IV. Acetolysis products of cancentrine methiodide. R. Rodrigo, R. H. F. Manske, V. Smula, D. B. MacLean, and L. Baczynskyj, 3900.

Magdzinski, L. K.

The triplet state of ketones in solution: quenching of triplet acetone by amines. R. W. Yip, R. O. Loutfy, Y. L. Chow, and L. K. Magdzinski, 3426.

Magee, M. D.

Dielectric studies. Part XXXIV. Relaxation evidence for complex formation of 1,4-dioxan with chelated ring systems. M. D. Magee and S. Walker, 2799.

- Mah, H. D.**
Possible intermediates in the biosynthesis of porphyrins. J. M. Osgerby, J. Pluscec, Y. C. Kim, F. Boyer, N. Stojanac, H. D. Mah, and S. F. MacDonald, 2652.
- Maillot, J. F.**
Phase relationships in the calcium chloride-calcium carbide system. J. F. Maillot and D. R. Morris, 839.
- Makhubu, L. P.**
The influence of the 2-alkoxy group and of C-5 substituents on the direction of reductive cleavage of 2-alkoxytetrahydrofurans by AlH_2Cl in ether solution. P. C. Loewen, L. P. Makhubu, and R. K. Brown, 1502.
- Malaval, A.**
The importance of conformation of the tetrahedral intermediate in the hydrolysis of esters. Selective cleavage of the tetrahedral intermediate controlled by orbital orientation. P. Deslongchamps, P. Atlani, D. Fréhel, and A. Malaval, 3405.
- Malcolm, R. B.**
Studies of organophosphorus derivatives. Part I. Nuclear magnetic resonance studies of the 2-oxo-1,3,2-dioxaphosphorinane system. L. D. Hall and R. B. Malcolm, 2092.
A novel class of isomeric phosphate esters. L. D. Hall and R. B. Malcolm, 2102.
- Mallon, C.**
Substituent effects in dye-sensitized photooxidation reactions of furans. R. H. Young, R. L. Martin, N. Chinh, C. Mallon, and R. H. Kayser, 932.
- Mamer, O. A.**
The thermolytic generation of benzofuran from *o*-hydroxyacetophenone. O. A. Mamer, 2513.
- Mann, R. S.**
The hydrogenation of allene. IV. The reaction of allene with hydrogen catalyzed by palladium, platinum, iridium, rhodium, ruthenium, and osmium catalysts. R. A. Mann and A. M. Shah, 1793.
- Manske, R. H. F.**
Cancentrine. II. The structure of cancentrine. R. Rodrigo, R. H. F. Manske, D. B. MacLean, L. Baczynskyj, and J. K. Saunders, 853.
Cancentrine. III. Dehydroderivatives. D. B. MacLean, L. Baczynskyj, R. Rodrigo, and R. H. F. Manske, 862.
An unusual Oppenauer oxidation of (\pm) jopihocarpine. V. Smula, R. H. F. Manske, and R. Rodrigo, 1544.
The total synthesis of (\pm) jochrobinine. B. Nalliah, Q. A. Ahmed, R. H. F. Manske, and R. Rodrigo, 1819.
The triterpenes of *Lycopodium lucidulum* Michx. K. Orito, R. H. Manske, and R. Rodrigo, 3280.
Cancentrine. IV. Acetolysis products of cancentrine methiodide. R. Rodrigo, R. H. F. Manske, V. Smula, D. B. MacLean, and L. Baczynskyj, 3900.
- Manville, J. F.**
Juvenile hormone mimics in conifers. I. Isolation of (-)-*cis*-4-[1'-(R)-5'-dimethyl-3'-oxohexyl]-cyclohexane-1-carboxylic acid from Douglas-fir wood. I. H. Rogers and J. F. Manville, 2380.
- Maradufu, A.**
Erratum: Stereochemistry of dehydrogenation by D-galactose oxidase. A. Maradufu, G. M. Cree, and A. S. Perlin, 768.
High stereoselectivity in the deuteration of a primary carbon L-threose-4-*d* (4S). A. Maradufu, D. M. Mackie, and A. S. Perlin, 2617.
- March, R. E.**
Collisional deactivation rates of electronically excited molecular ions. II. G. I. Mackay and R. E. March, 1.
Collisional deactivation rates of electronically excited molecular ions. III. O_2^+ ($b^4\Sigma_g^-$). G. I. MacKay, J. P. Anglesey, and R. E. March, 2516.
- Marchessault, R. H.**
Conformational terminology for crystalline cellulose. P. R. Sundararajan and R. H. Marchessault, 792.
The crystalline structure of poly- β -D(1 \rightarrow 4')mannose: mannan I. I. Nieduszynski and R. H. Marchessault, 2030.
- Marcotrigiano, G.**
Adducts of piperidine, piperazine, methylpiperazine, and morpholine with bis(β -ketoenolates) of nickel(II). G. Marcotrigiano, R. Battistuzzi, and G. C. Pellacani, 2557.
- Margrave, J. L.**
Reactions of unsaturated compounds with silicon difluoride. Part I. Acetylene. C. S. Liu, J. L. Margrave, J. C. Thompson, and P. L. Timms, 459.
Reactions of silicon difluoride with unsaturated organic compounds. Part II. Alkyl substituted alkynes. C. S. Liu, J. L. Margrave, and J. C. Thompson, 465.
- Marinier, B.**
Peptides de l'acide djenkolique. II. Une nouvelle méthode de synthèse du glutathion oxydé. B. Marinier et M. Bérubé, 1633.
- Marino, M. L.**
Structure of grandifloreneic acid. F. Piozzi, S. Passannanti, M. L. Marino, and V. Sprio, 109.
- Marinsky, J. A.**
The measurement of the activity coefficient ratios of protonated and neutral forms of Hammett indicators in several strong acids. T. R. Essig and J. A. Marinsky, 2254.

- Marr, D. H.**
Phosphonitric chloride—The dehydration of amides to nitriles. J. C. Graham and D. H. Marr, 3857.
- Marshall, A. G.**
Evaluation of the binding constants, bound chemical shifts, and stoichiometry of lanthanide-substrate complexes. I. Armitage, G. Dunsmore, L. D. Hall, and A. G. Marshall, 2119.
- Martin, G. D.**
Dielectric studies. Part XXXII. Detection of high frequency absorption from microwave data. G. D. Martin and S. Walker, 707.
Examination of two theories for absorption of microwave and far infrared radiation by polar liquids. M. Benson, G. D. Martin, S. Walker, J. Warren, and R. Wilson, 2610.
- Martin, J. J. P.**
Etude des oxynitrates de plomb. I. Synthèse des oxynitrates de plomb hydratés et de l'oxyde de plomb anhydre ou hydraté. H. Brusset, J. J. P. Martin, C. Martin-Lefevre, Y. Repelin, E. Husson et B. Despagne, 184.
- Martin, J. S.**
Solvation of the sodium ion. Quadrupolar broadening of the ^{23}Na nuclear magnetic resonance. R. D. Green and J. S. Martin, 3935.
- Martin, R. L.**
Substituent effects in dye-sensitized photooxidation reactions of furans. R. H. Young, R. L. Martin, N. Chinh, C. Mallon, and R. H. Kayser, 932.
- Martin, T. I.**
The structure of nupharolutine, an alkaloid of *Nuphar luteum*. J. T. Wróbel, A. Iwanow, C. Braekman-Danheux, T. I. Martin, and D. B. MacLean, 1831.
Neothiobinupharidine sulfoxide, a new alkaloid of *Nuphar luteum*. J. T. Wróbel, A. Iwanow, J. Szychowski, J. Poplawski, C. K. Yu, T. I. Martin, and D. B. MacLean, 1968.
- Martin-Lefevre, C.**
Etude des oxynitrates de plomb. I. Synthèse des oxynitrates de plomb hydratés et de l'oxyde de plomb anhydre ou hydraté. H. Brusset, J. J. P. Martin, C. Martin-Lefevre, Y. Repelin, E. Husson et B. Despagne, 184.
- Massey, R. E.**
The preparation and acetolyses of 5-deuteriated *exo*-2-norbornyl-*p*-bromobenzenesulfonates. N. H. Werstiuk, R. R. MacDonald, R. W. Ouwehand, W. L. Chan, F. P. Cappelli, J. G. Ballard, R. E. Young, R. E. Massey, G. Timmins, I. Goodwin, A. Walling, and Y. Teruta, 618.
- Matheson, A. F.**
Secondary kinetic isotope effects in bimolecular nucleophilic substitutions. V. The role of the solvent in the reaction between methyl iodide and pyridine. K. T. Leffek and A. F. Matheson, 982.
Secondary kinetic isotope effects in bimolecular nucleophilic substitutions. VI. Effect of α and β deuteration of alkyl halides in their Menshutkin reactions with pyridine in nitrobenzene. K. T. Leffek and A. F. Matheson, 986.
- Matsumoto, K.**
Reactions of tetrasubstituted azomethine ylides generated from tetracyanoethylene oxide. J. W. Lown and K. Matsumoto, 534.
Reaction of diphenylcyclopropenethione with pyridinium imines. J. W. Lown and K. Matsumoto, 584.
- Matthews, R. W.**
Studies of metal carboxylates. Part II. Cobalt(II) and nickel(II) complexes of certain pyridine carboxylic acids and pyridine-3-sulfonic acid: magnetic and spectral studies. A. Anagnostopoulos, R. W. Matthews, and R. A. Walton, 1307.
- McAlpine, R. D.**
Photooxidation and decarboxylation of tyrosine studied by E.P.R. and C.I.D.N.P. techniques. M. Tomkiewicz, R. D. McAlpine, and M. Cocivera, 3849.
- McCabe, P. H.**
cis-5-Cyclooctene-1,2-dione and its ethylene ketals. P. Yates, E. G. Lewars, and P. H. McCabe, 1548.
- McCarville, A. R.**
The conformational enthalpy, entropy, and free energy of the formyl group determined by low temperature proton magnetic resonance. G. W. Buchanan and A. R. McCarville, 1965.
- McClung, R. E. D.**
An electron spin resonance examination of ferrocenylalkyl- and aryl ketals. G. Bigam, J. Hooz, S. Linke, R. E. D. McClung, M. W. Mosher, and D. D. Tanner, 1825.
- McCowan, J. D.**
Infrared and nuclear magnetic resonance spectra of methyl titanium halides. J. F. Hanlan and J. D. McCowan, 747.
Thermal decomposition of methyl titanium chlorides. J. D. McCowan and J. F. Hanlan, 755.
- McCurdy, K. G.**
Influence of surface area variation on the kinetics of hydration of tricalcium silicate. K. G. McCurdy and B. P. Erno, 701.
- McDowell, C. A.**
Photoelectron spectra of some bromoethylenes and 2-bromopropene. D. Chadwick, D. C. Frost, A. Katrib, C. A. McDowell, and R. A. N. McLean, 2642.

- McElwain, D. L. S.**
The master equation for the dissociation of a dilute diatomic gas. VI. Solution of coupled sets of master equations. D. L. S. McElwain and H. O. Pritchard, 897.
The master equation for the dissociation of a dilute diatomic gas. VII. Vibration-dissociation coupling in an expansion nozzle. N. I. Labib, D. L. S. McElwain, and H. O. Pritchard, 3832.
- McErlane, K. M. J.**
Stereochemistry of 3-methyl-4-phenylpiperidines derived from corresponding 4-phenyl-1-piperidinols. K. M. J. McErlane and A. F. Casy, 2149.
- McEwen, K. L.**
A semi-empirical analysis of the electronic spectrum and molecular structure of formaldehyde. I. Absar, C. S. Lin, and K. L. McEwen, 646.
A semi-empirical analysis of the electronic spectra and molecular structures of hydrogen cyanide and carbon dioxide. I. Absar and K. L. McEwen, 653.
- McFarland, J. J.**
Hydroxy complexes of platinum(II) and palladium(II). G. W. Bushnell, K. R. Dixon, R. G. Hunter, and J. J. McFarland, 3694.
- McIntosh, J. M.**
On the extent of transannular rearrangement in the formolysis of 1,5-cyclooctadiene monoepoxide. J. M. McIntosh, 2152.
- McIntosh, J. S. E.**
The triplet state of ketene. J. S. E. McIntosh and G. B. Porter, 2313.
- McKenney, D. J.**
Kinetic study of the pyrolysis of formaldehyde. C. J. Chen and D. J. McKenney, 992.
CN emission in active nitrogen. II. The role of energy transfer and atom transfer reactions in CN ($X^2\Sigma^+$) excitation. G. M. Provencher and D. J. McKenney, 2527.
- McKinnon, D. M.**
Kinetics and mechanism for the hydrolysis of chlorothionoformate and chlorodithioformate esters in water and aqueous acetone. D. M. McKinnon and A. Queen, 1401.
The reaction of some isothiazolium salts with sulfur in pyridine. G. E. Bachers, D. M. McKinnon, and J. M. Buchsriber, 2568.
- McLean, R. A. N.**
Photoelectron spectra of some bromoethylenes and 2-bromopropene. D. Chadwick, D. C. Frost, A. Katrib, C. A. McDowell, and R. A. N. McLean, 2642.
- McLean, S.**
The constituents of *Nauclea diderrichii*. Part II. Isolation and classification of constituents; simple β -carboline and pyridine alkaloids. S. McLean and D. G. Murray, 1478.
The constituents of *Nauclea diderrichii*. Part III. Indole-pyridine alkaloids. D. G. Murray, A. Szakolcai, and S. McLean, 1486.
The constituents of *Nauclea diderrichii*. Part IV. Miscellaneous substances; biogenetic considerations. S. McLean and D. G. Murray, 1496.
The alkaloids of *Ormosia semicastrata*: (–)-ormosanine, (\pm)-piptanthine, (–)-18-epiormosanine, and (–)-ormocastine. S. McLean, M. L. Roy, H.-J. Liu, and D. T. Chu, 1639.
Thermal routes to substituted cyclopentadienes. D. M. Findlay, M. L. Roy, and S. McLean, 3186.
- McQuaker, N. R.**
Infrared and Raman spectra of single crystals of anhydrous strontium formate. N. R. McQuaker and K. B. Harvey, 1453.
- Meathrel, W. G.**
Quaternary nitrogen heterocycles. I. Equilibrium and spectral data for pseudobase formation by the *N*-methyl cations of diazanaphthalenes. J. W. Bunting and W. G. Meathrel, 917.
- Mehra, M. C.**
Aqueous reactions of sparingly soluble tellurites. I. Silver tellurite. M. C. Mehra and S. M. Kahn, 1778.
- Mehta, R. K.**
Formation constants of copper(II) and zinc(II) with *N*-salicylideneanthranilic acid in 50–50 water–dioxane. R. K. Mehta and R. K. Gupta, 1609.
- Menon, B. C.**
Novel rearrangement during alkaline hydrolysis of 1,1,1-trichloro-2-alken-4-ones. E. Kiehlmann, B. C. Menon, and J. I. Wells, 2561.
- Mercer, J. R.**
Sterically hindered aromatic compounds. V. Solvolysis of *p*-methyl, 2,4,6-trimethyl-, and 2,4,6-tri-*t*-butylbenzyl chloride. Effect of solvent and α -deuterium substitution. L. R. C. Barclay, J. R. Mercer, and J. C. Hudson, 3965.
- Mercier, C.**
Synthesis of 1-methyl-tricyclo[5.2.2.0^{2,6}]undec-2(6)-ene-8-one. C. Mercier, A. R. Addas, and P. Deslongchamps, 1882.
- Meunier, J.**
Etude par spectrometrie de vibration des composés d'addition formés entre le chlorure ou le bromure d'aluminium et le dimethylsulfoxyde. J. Meunier et M. T. Forel, 1157.

- Milburn, R.**
Metal-ammonia reduction. Part I. The reduction of α,ω -diaryllkanes and triphenylmethanes. D. N. Butler and R. Milburn, 1249.
- Mile, B.**
Chemical reactions of methane in a triboelectric discharge. W. G. Alcock, E. J. Hayward, B. Mile, and B. Ward, 3813.
- Miller, J. M.**
A proton nuclear magnetic resonance study of the exchange reactions of acetonitrile-boron trihalide adducts with excess acetonitrile. J. Fogelman and J. M. Miller, 1262.
- Miller, L. E.**
The photochemistry of 1-methoxy-1,4-dihydro-1,4-ethenoanthracene. C. O. Bender, J. L. M. Elder, A. J. Herbst, and L. E. Miller, 395.
- Milne, J. B.**
The trifluoroacetic acid solvent system. Part IV. Triple ions. M. G. Harriss and J. B. Milne, 3789.
- Miskow, M. H.**
Conformational studies of substituted trimethylene sulfites by proton magnetic resonance. G. Wood, G. W. Buchanan, and M. H. Miskow, 521.
- Mitchell, R. E.**
Attempts at the synthesis of the penicillin ring system by transannular reactions. M. H. Benn and R. E. Mitchell, 2195.
- Mitnyan, L.**
Influence des paramètres géométriques sur la résistance d'une cellule électrolytique. J. C. Sisi, C. Dubeau, J. P. Pélissier, et L. Mitnyan, 2491.
- Mojelsky, T.**
Photoreactions of nitroso compounds in solution. XXII. Stereochemical consequences of the photoaddition of *N*-nitrosopiperidine to conjugated acyclic dienes: a nuclear magnetic resonance study of enone oximes. Y. L. Chow, C. J. Colon, H. H. Quon, and T. Mojelsky, 1065.
- Money, T.**
Sequence studies in biosynthesis: trichotecin. J. M. Forrester and T. Money, 3310.
- Mongrain, M.**
Total synthesis of (+)-occidentalol. M. Sergeant, M. Mongrain, and P. Deslongchamps, 336.
- Moraliloglu, E.**
Chemistry and synthetic utility of α -(dimethylamino)benzylidene and 1-(dimethylamino)ethylidene acetals. S. Hanessian and E. Moraliloglu, 233.
- Moreau, C.**
The importance of conformation in the ozonolysis of acetals. P. Deslongchamps, C. Moreau, D. Fréhel, and P. Atlani, 3402.
- Morris, D. R.**
Phase relationships in the calcium chloride-calcium carbide system. J. F. Maillot and D. R. Morris, 839.
- Morris, M. F.**
Mössbauer and infrared spectra of octahedral complexes of iron(II) halides with amides and related ligands. T. Birchall and M. F. Morris, 201.
Mössbauer and infrared spectra of tetrahedral complexes of iron(II) halides with thioamides and related ligands. T. Birchall and M. F. Morris, 211.
- Mosher, M. W.**
An electron spin resonance examination of ferrocenylalkyl- and aryl ketyls. G. Bigam, J. Hooz, S. Linke, R. E. D. McClung, M. W. Mosher, and D. D. Tanner, 1825.
- Moskovits, M.**
Matrix infrared and Raman spectroscopic evidence for $\text{Pd}(\text{N}_2)_3$ in solid nitrogen. G. A. Ozin, M. Moskovits, P. Kündig, and H. Huber, 2385.
Intermediate binary carbonyls of palladium $\text{Pd}(\text{CO})_n$, where $n = 1-3$; preparation, identification, and diffusion kinetics by matrix isolation infrared spectroscopy. P. Kündig, M. Moskovits, and G. A. Ozin, 3587.
- Moss, K. C.**
The crystal structure of caesium oxotetrafluorovanadate(V). G. W. Bushnell and K. C. Moss, 3700.
- M'Packo, J.-P.**
The electrochemical reduction of compounds with the $-\text{N}=\text{C}-\text{C}=\text{N}-$ group. III. *as*-Triazines. J. Pinson, J.-P. M'Packo, N. Vinot, J. Armand, and P. Bassinet, 1581.
- Muchowski, J. M.**
Five-membered heterocyclic thiones. Part I. 1,3,4-Oxadiazole-2-thione. D. E. Horning and J. M. Muchowski, 3079.
Five-membered heterocyclic thiones. Part II. Oxazole-2-thione. G. Lacasse and J. M. Muchowski, 3082.
A new synthesis of 5-phenyl-2,3-dihydro- and 2,3,4,5-tetrahydro-1*H*-2-benzazepin-1-ones. K. Ackermann, D. E. Horning, and J. M. Muchowski, 3886.
- Mulchinock, J. K.**
Electron spin resonance studies of γ -ray irradiated single crystals of D-tartaric acid. J. K. Mulchinock, F. R. Hallett, and F. C. Adam, 3706.

- Murray, D. G.**
The constituents of *Nauclea diderrichii*. Part II. Isolation and classification of constituents; simple β -carboline and pyridine alkaloids. S. McLean and D. G. Murray, 1478.
The constituents of *Nauclea diderrichii*. Part III. Indole-pyridine alkaloids. D. G. Murray, A. Szokolcai, and S. McLean, 1486.
The constituents of *Nauclea diderrichii*. Part IV. Miscellaneous substances; biogenetic considerations. S. McLean and D. G. Murray, 1496.
- Murray, R. M.**
The preparation and paramagnetic susceptibility of β -MnSe. R. M. Murray, B. C. Forbes, and R. D. Heyding, 4059.
- Mustoe, F. J.**
The conformation of racemic 4,6-dimethyl trimethylene sulfite by gas phase electron diffraction. F. J. Mustoe and J. L. Hencher, 3892.
- Nagabhushan, T. L.**
Relationship of ^{13}C to vicinal ^1H coupling to the torsion angle in uridine and related structures. R. U. Lemieux, T. L. Nagabhushan, and B. Paul, 773.
- Nagy, H.**
Pyrrole chemistry. XIV. Some chemical and physical properties of 3-pyrrolicarbaldehyde and 1-methyl-3-pyrrolicarbaldehyde. H. J. Anderson and H. Nagy, 1961.
- Nalliah, B.**
The total synthesis of (\pm) ochrobirine. B. Nalliah, Q. A. Ahmed, R. H. F. Manske, and R. Rodrigo, 1819.
- Narang, S. A.**
A novel phosphate protecting group for oligonucleotide synthesis. R. H. Wightman, S. A. Narang, and K. Itakura, 456.
A simplification in the synthesis of deoxyribonucleotides. S. A. Narang, K. Itakura, and R. H. Wightman, 769.
- Neilson, T.**
Oligoribonucleotide synthesis. IV. Approach to block synthesis. E. S. Werstiuk and T. Neilson, 1283.
- Neville, G. A.**
Isomeric pyrimidone and uracil derivatives obtained by reaction of barbiturates with diazomethane. G. A. Neville and H. W. Avdovich, 880.
Use of $\text{Eu}(\text{fod})_3$ shift reagent and solvent effects in structural elucidation of novel isomeric pyrimidones and model methoxylated pyrimidines. G. A. Neville, 1253.
- Newlands, M. J.**
Ambident ligands. I. Phenylsulfoxycetic acid. N. J. Gogan, M. J. Newlands, and B.-Y. Tan (Neè Yap), 3202.
- Newton, R. P.**
Photolysis of aqueous solutions of 9,10-anthraquinone-2-sulfonate. Part I. Dependence of product yields on reaction conditions. A. D. Broadbent and R. P. Newton, 381.
- Ng, F. T. T.**
An e.s.r. study of a rhodium(I) molecular oxygen complex in solution. B. R. James, F. T. T. Ng, and E. Ochiai, 590.
- Ng, H. N.**
Crystal structure and electron spin resonance of Mn^{2+} in MgV_2O_6 . H. N. Ng and C. Calvo, 3619.
- Ng, W. L.**
Electrical conductivity of pure and doped ammonium perchlorate crystals. P. W. M. Jacobs, F. E. Lovatt, and W. L. Ng, 3154.
- Nichols, P. C.**
A new photochemical reaction of unconjugated thioketones. J. J. Worman, M. Shen, and P. C. Nichols, 3923.
- Nieduszynski, I.**
The crystalline structure of poly- β -D(1 \rightarrow 4')mannose: mannan I. I. Nieduszynski and R. H. Marchessault, 2030.
- Nienhuis, Z. R. H.**
Kinetics of sulfonation of phenylmethanesulfonic acid. Z. R. H. Nienhuis, W. J. Spillane, and H. Cerfontain, 1591.
- Nip, W.**
Thermal reactions of sodium azide in the presence of nitric oxide and hydrogen. R. A. Back and W. Nip, 777.
- Noda, S.**
Optical and thermal bleaching of trapped electrons in aliphatic amine glasses. S. Noda, K. Fueki, and Z. Kuri, 2699.
- Norman, L. J.**
An electron spin resonance study of the radical cations derived from dialkoxybiphenyls. P. D. Sullivan and L. J. Norman, 2141.
- Norris, A. R.**
The infrared and Raman spectra of dimethyldioarsine. H. F. Shurvell, M. R. Gold, and A. R. Norris, 2691.
- Nowlan, V. J.**
The addition of 4-chloro- and 2,4-dinitrobenzenesulfonyl chloride to *cis*- and *trans*-1-phenylpropene. G. H. Schmid, V. M. Csizmadia, V. J. Nowlan, and D. G. Garratt, 2457.
- Nuyt, A.**
La photo-oxydation du $\text{Hg}(\text{I})$ par le $\text{Ce}(\text{IV})$ en solution aqueuse d'acide perchlorique. A. Nuyt et M. Zador, 2413.

Nyburg, S. C.

The crystal and molecular structure of two thiathiophthen nitrogen isosteres. F. Leung and S. C. Nyburg, 324.

The crystal and molecular structure of bis(triphenylphosphine)(ethylene)platinum, $(PPh_3)_2PtC_2H_4$. P.-T. Cheng and S. C. Nyburg, 912.

Ochiai, Ei.

An e.s.r. study of a rhodium(I) molecular oxygen complex in solution. B. R. James, F. T. T. Ng, and Ei. Ochiai, 590.

O'Connell, J. P.

Analysis of a first-order perturbation theory for the direct correlation function of dense fluids. S. W. Brelvi and J. P. O'Connell, 3135.

Ogilvie, K. K.

Synthesis of 8,2'-thioanhydroguanosine. K. K. Ogilvie, L. Slotin, J. B. Westmore, and D. Lin, 1100.

Synthesis of oligothymidylates on an insoluble polymer support. K. K. Ogilvie and K. Kroeker, 1211.

A general synthesis of 8,2'-thioanhydropurine nucleosides. K. K. Ogilvie, L. Slotin, J. B. Westmore, and D. Lin, 2249.

Thermal rearrangement of acyl groups in anhydronucleosides. A convenient synthesis of 5'-O-acetylanhydrouridine. K. K. Ogilvie, J. B. Westmore, G. Taylor, D. Lin, D. Iwacha, H. Wayborn, and G. E. Dunn, 2365.

Synthesis of 8,3'-thioanhydroguanosine. K. K. Ogilvie, L. A. Slotin, D. C. K. Lin, and J. B. Westmore, 3276.

Oliveto, E. P.

Nitration studies on 2-isopropylimidazole. R. S. Glass, J. F. Blount, D. Butler, A. Perrotta, and E. P. Oliveto, 3472.

Onyszchuk, M.

Enthalpies of dissociation of ammonia and amine adducts of some tetraalkylammonium pentafluorosilicates. I. Wharf and M. Onyszchuk, 3450.

Orito, K.

The triterpenes of *Lycopodium lucidulum* Michx. K. Orito, R. H. Manske, and R. Rodrigo, 3280.

Oserby, J. M.

Possible intermediates in the biosynthesis of porphyrins. J. M. Oserby, J. Pluscec, Y. C. Kim, F. Boyer, N. Stojanac, H. D. Mah, and S. F. MacDonald, 2652.

Othen, D. A.

The infrared spectrum of ethylene oxide clathrate hydrate between 360 and 20 cm^{-1} , at 100 °K. J. E. Bertie and D. A. Othen, 3443.

Ouwehand, R. W.

The preparation and acetolyses of 5-deuteriated *exo*-2-norbornyl-*p*-bromobenzenesulfonates. N. H. Werstiuk, R. R. MacDonald, R. W. Ouwehand, W. L. Chan, F. P. Cappelli, J. G. Ballard, R. E. Young, R. E. Massey, G. Timmins, I. Goodwin, A. Walling, and Y. Teruta, 618.

Owens, R. M.

Stereochemistry of the cycloaddition of singlet excited β -substituted styrenes to olefins. O. L. Chapman, R. D. Lura, R. M. Owens, E. D. Plank, S. C. Shim, D. R. Arnold, and L. B. Gillis, 1984.

Ozin, G. A.

Matrix infrared and Raman spectroscopic evidence for $Pd(N_2)_2$ in solid nitrogen. G. A. Ozin, M. Moskovits, P. Kündig, and H. Huber, 2385.

Preparation, vibrational spectra, normal coordinate analysis, and structures of bis-pyridine and orthophenanthroline complexes of mixed halogenosilanes. D. H. Boal and G. A. Ozin, 2484.

Intermediate binary carbonyls of palladium $Pd(CO)_n$ where $n = 1-3$; preparation, identification, and diffusion kinetics by matrix isolation infrared spectroscopy. P. Kündig, M. Moskovits, and G. A. Ozin, 3587.

Binary dioxygen complexes of nickel; infrared spectroscopic evidence for $Ni(O_2)$ and $(O_2)Ni(O_2)$ in low temperature matrices. H. Huber and G. A. Ozin, 3746.

Pan, C. S. J.

A synthetic study in the tricyclovetivene series. A. Deljac, W. D. MacKay, C. S. J. Pan, K. J. Wiesner, and K. Wiesner, 726.

Erratum: A synthetic study in the tricyclovetivene series. A. Deljac, W. D. MacKay, C. S. J. Pan, K. J. Wiesner, and K. Wiesner, 3933.

Pande, I. M.

Infrared and electronic spectral studies of cobalt(II) and nickel(II) complexes of *N*-allyl urea and *N*-allyl thiourea. P. P. Singh and I. M. Pande, 2603.

Pandey, R. N.

Carboxylate complexing of iron(III). I. The formation of monoacetatoiron(III) in aqueous solution: equilibria and kinetics. R. N. Pandey and W. MacF. Smith, 194.

Paralikar, A. B.

The structure and stereochemistry of hydroxyachillin. F. W. Bachelor, A. B. Paralikar, and S. Itô, 333.

Paraskevopoulos, G.

Relative rate of reaction of $O(^1D_2)$ with N_2O . G. Paraskevopoulos, V. B. Symonds, and R. J. Cvetanović, 1838.

Parnell, R. D.

A kinetic and electron spin resonance study of the polymerization of vinyl acetate retarded by 2,4,6-tri-*t*-butylphenol. H. Lilles, R. D. Parnell, and K. E. Russell, 3304.

- Parris, M.**
Two diastereometric oxalatobis(S-butane-1,3-diamine) cobalt(III) complexes. M. Parris, L. J. DeHayes, and D. H. Busch, 3569.
- Paskovich, D. H.**
The electron paramagnetic resonance spectrum of the phenalane anion. D. H. Paskovich and A. H. Reddoch, 1523.
- Passannanti, S.**
Structure of grandiflorenic acid. F. Piozzi, S. Passannanti, M. L. Marino, and V. Sprio, 109.
- Patil, K. C.**
Metal halide ammines. II. Thermal analyses, calorimetry, and infrared spectra of fluoride ammines and hydrates of bivalent metals. K. C. Patil and E. A. Secco, 567.
Complex fluorides with perovskite structure: thermal analyses, calorimetry, and infrared spectra. K. C. Patil and E. A. Secco, 1529.
- Paul, B.**
Relationship of ^{13}C to vicinal ^1H coupling to the torsion angle in uridine and related structures. R. U. Lemieux, T. L. Nagabhushan, and B. Paul, 773.
- Paulin, P. D.**
Terpolymerization of methacrylonitrile, styrene, and α -methylstyrene. A. Rudin, S. S. M. Chiang, H. K. Johnston, and P. D. Paulin, 1757.
- Payne, N. C.**
An intermediate in the conversion of an acetylene to a vinyl derivative: the crystal and molecular structure of *trans*-chloromethylbis(trimethylarsine) platinum(II) hexafluorobut-2-yne. B. W. Davies, R. J. Puddephatt, and N. C. Payne, 2276.
- Payzant, J. D.**
Kinetics and rate constants of reactions leading to hydration of NO_2^- and NO_3^- in gaseous oxygen, argon, and helium containing traces of water. J. D. Payzant, A. J. Cunningham, and P. Kebarle, 2230.
- Peat, I. R.**
An investigation of long-range proton-proton coupling constants in phenylacetylene derivatives. C. J. Macdonald, G. K. Hamer, I. R. Peat, and W. F. Reynolds, 2035.
- Pélessier, J. P.**
Influence des paramètres géométriques sur la résistance d'une cellule électrolytique. J. C. Sisi, C. Dubeau et J. P. Pélessier, 2491.
- Pellacani, G. C.**
Adducts of piperidine, piperazine, methylpiperazine, and morpholine with bis(β -ketoenolates) of nickel(II). G. Marcotrigiano, R. Battistuzzi, and G. C. Pellacani, 2559.
- Perchard, J. P.**
Etude des mouvements de molécules linéaires en phase liquide par analyse du profil des bandes d'absorption infrarouge. II. Bande γ_3 du sulfure de carbonyle. A. M. Bize, J. Soussen-Jacob, J. Vincent-Geisse, D. Legay et J. P. Perchard, 217.
- Perlin, A. S.**
Erratum: Stereochemistry of dehydrogenation by D-galactose oxidase. A. Maradufu, G. M. Cree, and A. S. Perlin, 768.
Carbon-13 chemical shifts of methylcyclohexanes, cyclohexanols, α - and β -D-glucose and their relation to carbon electron densities from the extended Huckel and Del Re theories. N. Cyr, A. S. Perlin, and M. A. Whitehead, 814.
The ^{13}C Fourier transform spectrum of heparin. Evidence for a biose repeating sequence of residues. A. S. Perlin, N. M. K. N. Y. Kin, S. S. Bhattacharjee, and L. F. Johnson, 2437.
High stereoselectivity in the deuteration of a primary carbon L-threose-4-d (4S). A. Maradufu, D. M. Mackie, and A. S. Perlin, 2617.
Orientational dependance of vicinal and geminal ^{13}C - ^1H coupling. J. A. Schwarcz and A. S. Perlin, 3667.
- Perrin, P. M.**
The far U.V. photolysis of alkenes: the use of hydrogen sulfide as a radical scavenger. G. J. Collin, P. M. Perrin, and C. M. Gaucher, 2391.
Photoisomerization of 2-alkenes in the presence of hydrogen sulfide. G. J. Collin and P. M. Perrin, 2400.
Photolyse dans l'ultraviolet à vide du *cis*- et du *trans*-butène-2. G. J. Collin et P. M. Perrin, 2823.
Etude de la réaction gaz-solide organique entre l'isobutène et le paraphénylphénol. R. Lamartine et R. Perrin, 2882.
- Perron, G.**
A comparative study of Bu_4NBr , NaBPh_4 , Ph_4PCl , and Ph_4AsCl in water and methanol at 25 °C: partial molal volumes, heat capacities, and viscosities. C. Jolicœur, P. R. Philip, G. Perron, P. A. Leduc, and J. E. Desnoyers, 3167.
- Perrotta, A.**
Nitration studies on 2-isopropylimidazole. R. S. Glass, J. F. Blount, D. Butler, A. Perrotta, and E. P. Oliveto, 3472.
- Perry, D. S.**
Location of energy barriers. V. Scaling the energy surface for $\text{AB} + \text{CD} \rightarrow \text{AC} + \text{BD}$. D. S. Perry and J. C. Polanyi, 3916.
- Perry, R. A.**
Photoreactions of nitroso compounds in solution. XX. Photoreduction, photoelimination, and photoaddition of nitrosamines. Y. L. Chow, M. P. Lau, R. A. Perry, and J. N. S. Tam, 1044.

- Photoreactions of nitroso compounds in solution. XXI. Stereochemical course of photoaddition of nitrosamines to some cyclic olefins and conformational isomers generated by $A^{1,3}$ -interaction. Y. L. Chow, S. C. Chen, K. S. Pillay, and R. A. Perry, 1051.
- Peterson, L. K.**
Synthesis and properties of substituted germylhydrazines. L. K. Peterson and K. I. Thé, 553.
The reactions of substituted germyl- and silylhydrazines with BX_3 and CY_2 acceptor species. L. K. Peterson and K. I. Thé, 562.
- Petkau, A.**
Silver plated bimolecular lipid membranes. A. Petkau, and W. S. Chelack, 1448.
- Phelps, D. J.**
Deuterium isotope effects in the reduction of cyclohexanones. The concepts of steric approach control and product development control. D. C. Wigfield and D. J. Phelps, 388.
- Philip, P. R.**
Isothermal compressibilities of aqueous solutions of tetraalkylammonium bromides. J. E. Desnoyers and P. R. Philip, 1094.
A comparative study of Bu_4NBr , $NaBPh_4$, Ph_4PCl , and Ph_4AsCl in water and methanol at 25 °C: partial molal volumes, heat capacities, and viscosities. C. Jolicœur, P. R. Philip, G. Perron, P. A. Leduc, and J. E. Desnoyers, 3167.
- Piantoni, G.**
Les équilibres solide-liquide dans des systèmes binaires formiate d'alcalin-formiate d'alcalino-terreux. G. Berchiesi, A. Cingolani, D. Leonesi et G. Piantoni, 1972.
- Pigott, F.**
A new synthesis of 6-hydroxydopamine. P. A. Wehrli, F. Pigott, and V. Chu, 3075.
- Pillay, K. S.**
Photoreactions of nitroso compounds in solution. XXI. Stereochemical course of photoaddition of nitrosamines to some cyclic olefins and conformational isomers generated by $A^{1,3}$ -interaction. Y. L. Chow, S. C. Chen, K. S. Pillay, and R. A. Perry, 1051.
- Pincock, R. E.**
Synthesis and reactions of strained hydrocarbons possessing inverted carbon atoms. Tetracyclo[3.3.1.1^{3,7}.0^{1,5}]decenes. R. E. Pincock, J. Schmidt, W. B. Scott, and E. J. Torupka, 3958.
- Pinson, J.**
The electrochemical reduction of compounds with the $-N=C-C=N-$ group. III. *as*-Triazines. J. Pinson, J.-P. M'Packo, N. Vinot, J. Armand, and P. Bassinet, 1581.
- Piozzi, F.**
Structure of grandiflorene acid. F. Piozzi, S. Passannanti, M. L. Marino, and V. Sprio, 109.
- Plambeck, J. A.**
Conductivity and viscosity of the tetrabutylammonium bromide-carbon tetrachloride system. K. F. Denning and J. A. Plambeck, 1600.
Ruthenium and arsenic electrode potentials in fused $LiCl-KCl$ eutectic. T. Folkman and J. A. Plambeck, 3911.
- Planckaert, A.**
Hydrogen bonding in the case of self-associated fluoroalcohols. A. Planckaert and C. Sandorfy, 296.
- Plank, E. D.**
Stereochemistry of the cycloaddition of singlet excited β -substituted styrenes to olefins. O. L. Chapman, R. D. Lura, R. M. Owens, E. D. Plank, S. C. Shim, D. R. Arnold, and L. B. Gillis, 1984.
- Pluscec, J.**
Possible intermediates in the biosynthesis of porphyrins. J. M. Osgerby, J. Pluscec, Y. C. Kim, F. Boyer, N. Stojanac, H. D. Mah, and S. F. MacDonald, 2652.
- Poë, A. J.**
Synthesis and kinetic behavior of some *trans*-diacidotetraamminerhodium(III) complexes. A. J. Poë and M. V. Twigg, 1089.
- Poh, B. L.**
Oxidations with potassium *trans*-1,2-diaminocyclohexanetetraacetatomanganate(III). I. Composition of the complex and the reaction with methanol. B. L. Poh and R. Stewart, 3432.
Oxidations with potassium *trans*-1,2-diaminocyclohexanetetraacetatomanganate(III). II. Reaction of the complex with hindered phenols. R. Stewart and B. L. Poh, 3437.
- Poludnikiewicz, W.**
Charge transfer complexes with nitrate esters as electron acceptors. T. Urbański, B. Hetnarski, and W. Poludnikiewicz, 3340.
- Polanyi, J. C.**
Location of energy barriers. V. Scaling the energy surface for $AB + CD \rightarrow AC + BD$. D. S. Perry and J. C. Polanyi, 3916.
- Ponpipom, M. M.**
The reaction of *O*-benzylidene sugars with *N*-bromosuccinimide. VI. A new synthesis of 2'-deoxyuridine and some of its selectively substituted derivatives. M. M. Ponpipom and S. Hanessian, 246.

- The reaction of *O*-benzylidene sugars with *N*-bromosuccinimide. VII. Stereochemical and mechanical aspects in the pyrimidine nucleoside series. M. M. Ponpipom and S. Hanessian, 253.
- Ponter, A. B.**
The wetting properties of aqueous solutions of valeric acid on solid surfaces. A. B. Ponter and A. P. Boyes, 1613.
The relation between contact angle and drop size for water at its boiling point for a pressure range 50–760 Torr. A. B. Ponter and A. P. Boyes, 2419.
- Poplawski, J.**
Neothiobinupharidine sulfoxide, a new alkaloid of *Nuphar luteum*. J. T. Wróbel, A. Iwanow, J. Szychowski, J. Poplawski, C. K. Yu, T. I. Martin, and D. B. MacLean, 1968.
- Porter, G. B.**
The triplet state of ketene. J. S. E. McIntosh and G. B. Porter, 2313.
- Pouteau, R. M. L.**
Benzene radical cation formation on hydrogen mordenite. The role of adsorbed oxygen. N. H. Sagert, R. M. L. Pouteau, M. G. Bailey, and F. P. Sargent, 2041.
The influence of the substrate on hydrogen–water deuterium exchange over carbon supported platinum. N. H. Sagert and R. M. L. Pouteau, 3686.
- Powell, W. S.**
Chemistry of aminochromes. Part XV. The reaction of epinochrome with thiols. W. S. Powell and R. A. Heacock, 3360.
- Price, J. T.**
Studies on fluorinated vinylic and aromatic alcohols and esters. I. S. Chang, J. T. Price, A. J. Tomlinson, and C. J. Willis, 512.
Fully fluorinated alkoxides. Part VI. Derivatives of hydroxyhexafluoroisobutyric acid. J. T. Price, A. J. Tomlinson, and C. J. Willis, 939.
- Price, S. J.**
Determination of $D[(CH_3)_3Pb-CH_3]$ by the toluene carrier method. K. M. Gilroy, S. J. Price, and N. J. Webster, 2639.
- Price, S. J. W.**
The pyrolysis of tetramethyltin. R. P. Johnson and S. J. W. Price, 50.
Determination of conditions for the suppression of $CH_3 + Sb(CH_3)_2 \rightarrow Sb(CH_3)_3$ and evaluation of $D[(CH_3)_2Sb-CH_3]$. S. J. W. Price and J. P. Richard, 966.
Determination of the heat of formation of hexafluorobenzene. M. Krech, S. J. W. Price, and W. F. Yared, 2935.
- Pritchard, H. O.**
The master equation for the dissociation of a dilute diatomic gas. VI. Solution of coupled sets of master equations. D. L. S. McElwain and H. O. Pritchard, 897.
Photolysis of di-*tert*-butyl peroxide at high pressure. C. K. Yip and H. O. Pritchard, 1531.
Anomalous rate laws in the halogenation of carbon tetrahalides. B. K. Dunning and H. O. Pritchard, 1785.
The master equation for the dissociation of a dilute diatomic gas. VII. Vibration–dissociation coupling in an expansion nozzle. N. I. Labib, D. L. S. McElwain, and H. O. Pritchard, 3832.
- Prokopcak, J. M.**
The electroreduction of substituted benzofurazans. W. R. Fawcett, P. A. Forte, R. O. Loutfy, and J. M. Prokopcak, 263.
Mechanism of S_N1 reactions. The kinetics of the decomposition of aralkyl carbonates. J. M. Prokopcak and T. H. Breckles, 1770.
- Provencher, G. M.**
CN emission in active nitrogen. II. The role of energy transfer and atom transfer reactions in CN ($X^2\Sigma^+$) excitation. G. M. Provencher and D. J. McKenney, 2527.
- Puddephatt, R. J.**
An intermediate in the conversion of an acetylene to a vinyl derivative: the crystal and molecular structure of *trans*-chloromethylbis(trimethylarsine) platinum(II) hexafluorobut-2-yne. B. W. Davies, R. J. Puddephatt, and N. C. Payne, 2276.
- Purkayastha, A.**
Studies in solubility parameter theory for mixed solvent systems. A. Purkayastha and J. Walkley, 834.
- Quail, J. W.**
Complex fluorides of tetravalent cobalt. J. W. Quail and G. A. Rivett, 2447.
- Queen, A.**
Kinetics and mechanism for the hydrolysis of chlorothionoformate and chlorodithioformate esters in water and aqueous acetone. D. M. McKinnon and A. Queen, 1401.
- Quinn, M. J.**
Homogeneous catalysis of D_2 – H_2O isotope exchange by pentacyanocobaltate(II). G. G. Strathdee and M. J. Quinn, 3144.
- Quon, H. H.**
Photoreactions of nitroso compounds in solution. XXII. Stereochemical consequences of the photoaddition of *N*-nitrosopiperidine to conjugated acyclic dienes: a nuclear magnetic resonance study of enone oximes. Y. L. Chow, C. J. Colon, H. H. Quon, and T. Mojelsky, 1065.
- Qureshi, M.**
Synthesis and ion exchange properties of thermally stable titanium(IV) vanadate: separation of Sr^{2+} from Ca^{2+} , Ba^{2+} , and Mg^{2+} . M. Qureshi, K. G. Varsheny, and S. K. Kabiruddin, 2071.

Rabenstein, D. L.

Nuclear magnetic resonance studies of the solution chemistry of metal complexes. III. Acetylglycine complexes of cadmium, zinc, and lead. D. L. Rabenstein, 1036.

Rabideau, P. W.

Concerning the discrepancies in the reported infrared spectra of dibenzo(*a,e*)cyclooctatetraene. T. W. Cutshall and P. W. Rabideau, 2364.

Rabinovitch, B. S.

Assessment of free radical catalysis in thermal methyl isocyanide isomerization. Variation of inert gas efficiency with k/k_{∞} . T. Fujimoto, F. M. Wang, and B. S. Rabinovitch, 3251.

Rachlis, L. M.

Cavitation-induced reactions in pure substituted benzenes. G. K. Diedrich, P. Kruus, and L. M. Rachlis, 1743.

Radatus, B.

Cyclopropylcarbinyloxy-carbonium ions. Part V. Synthesis and chemistry of some cyclopropyl glycopyranosides. B. Radatus and B. Fraser-Reid, 2909.

Cyclopropylcarbinyloxy-carbonium ions. Part VI. Synthesis and chemistry of an epimeric pair of homoallyl iodides (3-iodomethyl glycals). B. Fraser-Reid and B. Radatus, 2919.

Rahal, S.

Préparation simple et configuration de dérivés des bicyclo[3.3.1]nonanol-2 ones-9 *endo* et *exo*. Utilité de la fonction trichloro-2,2,2 éthoxycarbonyle comme groupe protecteur d'aldols. D. Gravel, S. Rahal et A. Regnault, 3846.

Rajala, G. E.

Dielectric and association behavior of 1-propanol, 2-propen-1-ol, and 2-propyn-1-ol in non-polar solvents. G. E. Rajala and J. Crossley, 99.

Rajeswari, K.

Alkyl shifts in cyclohexenyl cations. K. Rajeswari and T. S. Sorensen, 2939.

Randall, R. S.

Preparation, Mössbauer, and vibrational spectra of some penta- and hexacoordinated addition compounds of dimethyl and diphenyltin(IV) dichloride. B. V. Liengme, R. S. Randall, and J. R. Sams, 3212.

Ranganayakulu, K.

Equilibria studies on tetraalkylcyclopentenyl cations. A steric origin for a Baker-Nathan order? K. Ranganayakulu and T. S. Sorensen, 3534.

Rank, W.

Reactions of nitro sugars. XXVI. Analysis and separation of stereoisomers by nuclear magnetic resonance spectroscopy and column chromatography of benzyldene derivatives. H. H. Baer and W. Rank, 1216.

Selective reduction of carbohydrate nitroolefins. H. H. Baer and W. Rank, 1292.

Rao, C. L.

Analysis of ^{134}Cs isomer ratios in the fission of ^{237}Np with protons in the energy range 20–85 MeV. C. L. Rao and L. Yaffe, 1877.

Rao, P. M.

Reactions of thiyl radicals. VII. Photolysis of methyl sulfide vapor. P. M. Rao and A. R. Knight, 844.

Rao, V. M.

Erratum: Microwave spectrum and conformation of tetrahydropyran. V. M. Rao and R. Kewley, 955.

Erratum: Microwave spectrum of morpholine. J. J. Sloan and R. Kewley, 955.

Raoult, A.

Bond scission in sulfur compounds. V. A kinetic study of sulfur-oxygen and sulfur-chlorine bond scission in the methanolysis of *p*-nitrophenyl chlorosulfate. E. Buncel and A. Raoult, 1907.

Raza, M. A.

A nuclear magnetic resonance study of the symmetry of the proton spins in ethylene sulfite in a nematic solvent. M. A. Raza and L. W. Reeves, 2370.

Read, J. F.

The hydrogen-oxygen reaction on lanthanide oxides. I. Hydrogen and oxygen adsorption on some lanthanide oxides. J. F. Read, 490.

Reddoch, A. H.

The electron paramagnetic resonance spectrum of the phenalane anion. D. H. Paskovich and A. H. Reddoch, 1523.

Rees, A. H.

The chlorination of pyrroles. Part III. D. G. Durham, C. G. Hughes, and A. H. Rees, 3223.

Reeves, L. W.

A nuclear magnetic resonance study of the symmetry of the proton spins in ethylene sulfite in a nematic solvent. M. A. Raza and L. W. Reeves, 2370.

Regnault, A.

Préparation simple et configuration de dérivés des bicyclo[3.3.1]nonanol-2 ones-9 *endo* et *exo*. Utilité de la fonction trichloro-2,2,2 éthoxycarbonyle comme groupe protecteur d'aldols. D. Gravel, S. Rahal et A. Regnault, 3846.

Reinsborough, V. C.

Hypersonic velocities in molten salts by Brillouin spectroscopy. V. C. Reinsborough and J. P. Valteau, 2704.

- Renaud, R. N.**
Electrochemical oxidation of trifluoroacetic acid in an organic medium. I. Synthesis of trifluoroethane-1,1,1- d_3 and pentafluoropropane-1,1,1- d_3 . R. N. Renaud and D. E. Sullivan, 3084.
- Repelin, Y.**
Etude des oxynitrates de plomb. I. Synthèse des oxynitrates de plomb hydratés et de l'oxyde de plomb anhydre ou hydraté. H. Brusset, J. J. P. Martin, C. Martin-Lefevre, Y. Repelin, E. Husson et B. Despagne, 184.
- Reynolds, W. F.**
An investigation of long-range proton-proton coupling constants in phenylacetylene derivatives. C. J. Macdonald, G. K. Hamer, I. R. Peat, and W. F. Reynolds, 2035.
- Richard, J. P.**
Determination of conditions for the suppression of $\text{CH}_3 + \text{Sb}(\text{CH}_3)_2 \rightarrow \text{Sb}(\text{CH}_3)_3$ and evaluation of $D[(\text{CH}_3)_2\text{Sb}-\text{CH}_3]$. S. J. W. Price and J. P. Richard, 966.
- Richardson, A. W.**
The infrared and Raman spectra of 3-chloro-1,2,5-thiadiazole. A. W. Richardson, 627.
The ultraviolet absorption spectrum of furazan. B. J. Forrest and A. W. Richardson, 2088.
- Richer, J.-C.**
Sur la réduction par les hydrures complexes de quelques benzylidène-3 camphres. J.-C. Richer et A. Rossi, 438.
Sur la réduction par les hydrures complexes de benzyl-3 camphres. J.-C. Richer et A. Rossi, 1376.
- Riddell, J. D.**
Ion pair formation in $\text{NaNO}_3/\text{D}_2\text{O}$ solutions: Raman and infrared spectra, partial molal volumes, conductance, and viscosity. J. D. Riddell, D. J. Lockwood, and D. E. Irish, 2951.
- Riess, J.**
Réactions des phosphites triméthylque, triéthylque et triphénylique avec le cholestérol. C. Benezra, J.-L. Bravet et J. Riess, 2264.
- Rietveld, H. M.**
The crystal structure of potassium hydrogeniodate (V), $\text{KIO}_3 \cdot \text{HIO}_3$. G. Kemper, A. Vos, and H. M. Rietveld, 1134.
- Ritchie, R. G. S.**
Addition of pseudohalogens to unsaturated carbohydrates. V. Addition of iodine trifluoroacetate. R. G. S. Ritchie and W. A. Szarek, 507.
- Rivett, G. A.**
Complex fluorides of tetravalent cobalt. J. W. Quail and G. A. Rivett, 2447.
- Robertson, B. E.**
Conformations of bridged diphenyls. I. Crystal structure of 2-(3'-methyl-4'-nitrophenoxy)-1,3-diisopropylbenzene. E. A. H. Griffith, W. D. Chandler, and B. E. Robertson, 2963.
Conformations of bridged diphenyls. II. Crystal structure of 2-(2',4'-dinitrophenoxy)-1,3,5-tri-*t*-butylbenzene. E. A. H. Griffith, W. D. Chandler, and B. E. Robertson, 2972.
Conformations of bridged diphenyls. III. Crystal structure of 2-(2'-carbomethoxy-4'-nitrophenoxy)-1,3,5-trichlorobenzene. E. A. H. Griffith, W. D. Chandler, and B. E. Robertson, 2979.
- Robertson, R. E.**
An examination of the heat capacity of activation for the hydrolysis of *t*-butyl chloride in water. J. M. W. Scott and R. E. Robertson, 167.
The mechanism for hydrolysis of primary alkyl chlorosulfates in water. The kinetic solvent isotope effect and the secondary deuterium isotope effect. E. C. F. Ko and R. E. Robertson, 434.
Hydrolysis of sulfamoyl chlorides. II. Hydrogen participation in the hydrolysis of diethyl and methylethylsulfamoyl chlorides. E. C. F. Ko and R. E. Robertson, 946.
The hydrolysis of *t*-butyl chloride in aquo-organic mixtures: heat capacity of activation and solvent structure. R. E. Robertson and S. E. Sugamori, 1353.
- Rochon, F. D.**
Complexes de platine avec des dérivés acétyléniques $\text{Pt}(\text{R}_1\text{R}_2\text{C}(\text{OH})-\text{C}\equiv\text{C}-(\text{OH})\text{R}_1\text{R}_2)_2$. F. D. Rochon et T. Theophanides, 1325.
Zeise's salt, $\text{K}[\text{Pt}(\text{C}_2\text{H}_4)\text{Cl}_3]$ anhydrous and monohydrate and the platinum-olefin interaction. J. Hubert, P. C. Kong, F. D. Rochon, and T. Theophanides, 1596.
- Rodrigo, R.**
Cancentrine. II. The structure of cancentrine. R. Rodrigo, R. H. F. Manske, D. B. MacLean, L. Baczynskyj, and J. K. Saunders, 853.
Cancentrine. III. Dehydroderivatives. D. B. MacLean, L. Baczynskyj, R. Rodrigo, and R. H. F. Manske, 862.
An unusual Oppenauer oxidation of (\pm) ophiocarpine. V. Smula, R. H. F. Manske, and R. Rodrigo, 1544.
The total synthesis of (\pm) ochrobirine. B. Nalliah, Q. A. Ahmed, R. H. F. Manske, and R. Rodrigo, 1819.
The triterpenes of *Lycopodium lucidulum* Michx. K. Orito, R. H. Manske, and R. Rodrigo, 3280.
Cancentrine. IV. Acetolysis products of cancentrine methiodide. R. Rodrigo, R. H. F. Manske, V. Smula, D. B. MacLean, and L. Baczynskyj, 3900.
- Rodriguez, V. M.**
Doubling proton magnetic resonance signals by use of tris(dipivalomethanato)europium(III). P. Joseph-Nathan, J. E. Herz, and V. M. Rodriguez, 2788.

Rogers, I. H.

Juvenile hormone mimics in conifers. I. Isolation of (–)-*cis*-4-[1'-(R)-5'-dimethyl-3'-oxohexyl]-cyclohexane-1-carboxylic acid from Douglas-fir wood. I. H. Rogers and J. F. Manville, 2380.

Roigt, H.

Nature de la luminescence de la colchicine. H. Roigt et R. M. Leblanc, 1959.

Rollin, G.

Metals intercalated in graphite. I. Reduction and oxidation. J.-M. Lalancette, G. Rollin, and P. Dumas, 3058.

Rolston, J. H.

Isotopic exchange between hydrogen and water vapor over supported metal catalysts. Part I. Kinetics of the exchange. J. H. Rolston and J. W. Goodale, 1900.

Rosenthal, A.

Photoamidation of 3,4,6-tri-*O*-acetyl-1,2-dideoxy-D-*arabino*-hex-1-enopyranose. A. Rosenthal and A. Zanlungo, 1192.
Branched-chain nitro sugars. Methyl 4,6-*O*-benzylidene-2,3-dideoxy-3-*C*-nitromethyl- α -D-*ribo*-hexopyranoside. A. Rosenthal and G. Schöllhammer, 1780.

Ross, R. A.

The effect of heat treatment of silica gels on the calorimetric heats of adsorption of sulfur dioxide up to one-twentieth monolayer coverage at 423 °K. R. W. Glass and R. A. Ross, 1241.

Heterogeneous interactions of methylamines on porous adsorbents. Part I. The adsorption of monomethylamine on silica gels and silica-alumina. W. G. Cook and R. A. Ross, 1666.

Heterogeneous interactions of methylamines on porous adsorbents. Part II. Interactions on silica-alumina and silica gel surfaces of di- and tri-methylamine in the region of their boiling points. W. G. Cook and R. A. Ross, 2451.

Surface studies of heat-treated γ -aluminas in the adsorption of sulphur dioxide below monolayer coverage. R. W. Glass and R. A. Ross, 2537.

Adiabatic calorimetric studies of the adsorption of sulfur dioxide at 423 °K on heat-treated magnesias characterized by electron microscopy. R. W. Glass and R. A. Ross, 2817.

Rossi, A.

Sur la réduction par les hydrures complexes de quelques benzylidène-3 camphres. J.-C. Richer et A. Rossi, 438.

Sur la réduction par les hydrures complexes de benzyl-3 camphres. J.-C. Richer et A. Rossi, 1376.

Rossi, I.

Étude par spectrométrie i.r. des effets de solvant sur les fréquences fondamentale et harmoniques de l'acide iodhydrique. N.-V. Thanh et I. Rossi, 3411.

Rowbotham, J. B.

Sigma and pi electron contributions to long-range spin-spin coupling constants in the methyl derivatives of the fluoropyridines. J. B. Rowbotham and T. Schaefer, 2344.

Long-range spin-spin coupling constants from amino protons and ^{15}N to ring protons in aniline- ^{15}N and some derivatives. INDO molecular orbital calculations. R. Wasylichen, J. B. Rowbotham, L. Ernst, and T. Schaefer, 2575.

Roy, M. L.

The alkaloids of *Ormosia semicastrata*: (–)-ormosanine, (±)-piptanthine, (–)-18-epiormosanine, and (–)-ormocastrine. S. McLean, M. L. Roy, H.-J. Liu, and D. T. Chu, 1639.

Thermal routes to substituted cyclopentadienes. D. M. Findlay, M. L. Roy, and S. McLean, 3186.

Rudin, A.

Terpolymerization of methacrylonitrile, styrene, and α -methylstyrene. A. Rudin, S. S. M. Chiang, H. K. Johnston, and P. D. Paulin, 1757.

Ruest, L.

The Cotton effects of conjugated homoannular dienes. I. The non-generality of the rule of Moscovitz. J. Lessard, L. Ruest, and Ch. R. Engel, 1433.

Rujimethabhas, M.

The relative rates of the reaction of active nitrogen with perfluoro-olefins and perfluorobutylene-2. M. Rujimethabhas and W. E. Jones, 346.

Russell, K. E.

A kinetic and electron spin resonance study of the polymerization of vinyl acetate retarded by 2,4,6-tri-*t*-butylphenol. H. Lilles, R. D. Parnell, and K. E. Russell, 3304.

Rutherford, K. G.

The pyrolysis of some neopentyl xanthates: a competitive formation of olefins and dithiolcarbonates. K. G. Rutherford, B. K. Tang, L. K. M. Lam, and D. P. C. Fung, 3288.

Ryce, S. A.

Separation of gas mixtures by accommodation pumping. I. H. Doetsch and S. A. Ryce, 957.

Safe, S.

Mass spectra of some tropolones and tropolone methyl ethers. J. L. C. Wright, W. D. Jamieson, S. Safe, and L. C. Vining, 821.

Sagert, N. H.

Benzene radical cation formation on hydrogen mordenite. The role of adsorbed oxygen. N. H. Sagert, R. M. L. Pouteau, M. G. Bailey, and F. P. Sargent, 2041.

- The influence of the substrate on hydrogen-water deuterium exchange over carbon supported platinum. N. H. Sagert and R. M. L. Pouteau, 3686.
- Sams, J. R.**
The synthesis and structural studies of some dialkyltin(IV) salts of strong monobasic acids. T. H. Tan, J. R. Dalziel, P. A. Yeats, J. R. Sams, R. C. Thompson, and F. Aubke, 1843.
Preparation, Mössbauer, and vibrational spectra of some penta- and hexacoordinated addition compounds of dimethyl and diphenyltin(IV) dichloride. B. V. Liengme, R. S. Randall, and J. R. Sams, 3212.
- Sandorfy, C.**
Hydrogen bonding in the case of self-associated fluoroalcohols. A. Planckaert and C. Sandorfy, 296.
Valence-shell transitions in the vacuum-ultraviolet spectra of fluorobenzenes. R. Gilbert, P. Sauvageau, and C. Sandorfy, 543.
Model calculations on the influence of mechanical and electrical anharmonicity on infrared intensities: relation to hydrogen bonding. T. Di Paolo, C. Bourdéron, and C. Sandorfy, 3161.
A low temperature infrared study of self-association in thiols. R. Bicca de Alencastro and C. Sandorfy, 3594.
- Sanduja, M. L.**
Kinetics of the anation reaction of nickel(II) and 1,10-phenanthroline in ethanol. M. L. Sanduja and W. MacF. Smith, 3861.
- Sargent, F. P.**
Benzene radical cation formation on hydrogen mordenite. The role of absorbed oxygen. N. H. Sargent, R. M. L. Pouteau, M. G. Bailey, and F. P. Sargent, 2041.
- Sastri, V. S.**
Kinetics of displacement of Ni(II) by Cu(II) in bis(dithiocarbamate)nickel(II). R. R. Scharfe, V. S. Sastri, and C. L. Chakrabarti, 3384.
- Sauer, T. D.**
Synthesis and isomerization of adducts of azodicarbonyl compounds and cyclopentadiene. J. A. Campbell, D. Mackay, and T. D. Sauer, 371.
The acid-catalyzed isomerization of the adducts of azodiacyls with cyclopentadiene and 1,3-cyclohexadiene. C. Y.-J. Chung, D. Mackay, and T. D. Sauer, 1568.
The effect of bridge size on the sigmatropic rearrangement of 2,3-dibenzoyl-2,3-diazabicyclo[2.2.*n*]alk-5-enes. C. Y.-J. Chung, D. Mackay, and T. D. Sauer, 3315.
- Saunders, J. K.**
Cancentrine. II. The structure of cancentrine. R. Rodrigo, R. H. F. Manske, D. B. MacLean, L. Baczynskyj, and J. K. Saunders, 853.
- Sauvageau, P.**
Valence-shell transitions in the vacuum-ultraviolet spectra of fluorobenzenes. R. Gilbert, P. Sauvageau, and C. Sandorfy, 543.
- Savoie, R.**
Vibrational spectra of SiH₄ and SiD₄-SiH₄ mixtures in the condensed states. R. P. Fournier, R. Savoie, N. D. The, R. Belzile, and A. Cabana, 35.
Erratum: Vibrational spectra of SiH₄ and SiD₄-SiH₄ mixtures in the condensed states. R. P. Fournier, R. Savoie, N. D. The, R. Belzile, and A. Cabana, 1442.
- Sayer, B. G.**
¹³C Chemical shifts of highly substituted bicyclo[2.2.1]heptanes. N. H. Werstiuk, R. Taillefer, R. A. Bell, and B. G. Sayer, 2146.
- Scala, A. A.**
The vacuum ultraviolet photolysis of cyclopentanone. A. A. Scala and D. G. Ballan, 3938.
- Schaefer, T.**
Proton magnetic resonance spectra, conformational preferences, and approximate molecular orbital calculations for the *syn* and *anti* 2-furanaldoximes. R. Wasylishen and T. Schaefer, 274.
INDO molecular orbital calculations on the conformational dependence of long-range spin-spin coupling of methyl protons in toluene, *p*-fluorotoluene, and the xylenes. R. Wasylishen and T. Schaefer, 1852.
Proton magnetic resonance spectrum of 1-penten-3-yne. INDO and CNDO/2 molecular orbital calculations on long-range spin-spin coupling constants in enynes. L. Ernst, H. M. Hutton, and T. Schaefer, 1863.
Sigma and pi electron contributions to long-range spin-spin coupling constants in the methyl derivatives of the fluoropyridines. J. B. Rowbotham and T. Schaefer, 2344.
Long-range spin-spin coupling constants from amino protons and ¹⁵N to ring protons in aniline-¹⁵N and some derivatives. INDO molecular orbital calculations. R. Wasylishen, J. B. Rowbotham, L. Ernst, and T. Schaefer, 2575.
INDO MO calculations of the conformational dependence of the vicinal ¹³C,H spin-spin coupling constant in propane. R. Wasylishen and T. Schaefer, 2710.
INDO molecular orbital calculations of nitrogen-proton spin-spin coupling constants over two and three bonds. Effects of lone-pair orientation, of dihedral angles, and of protonation. R. Wasylishen and T. Schaefer, 2989.
- Scharfe, R. R.**
Kinetics of displacement of Ni(II) by Cu(II) in bis(dithiocarbamate)nickel(II). R. R. Scharfe, V. S. Sastri, and C. L. Chakrabarti, 3384.

Schmid, G. H.

The formation of alkenes by the thermal elimination reaction of *N*-methyl-4-alkoxypyridinium iodides. I. Scope of the reaction. G. H. Schmid and A. W. Wolkoff, 1181.

The formation of alkenes by the thermal elimination reaction of *N*-methyl-4-alkoxypyridinium iodides. II. An investigation of the mechanism. G. H. Schmid and A. W. Wolkoff, 1188.

The barrier to rotation in cyclopropylmethyl cations. A. Brown and G. H. Schmid, 2432.

The addition of 4-chloro- and 2,4-dinitrobenzenesulfonyl chloride to *cis*- and *trans*-1-phenylpropene. G. H. Schmid, V. M. Csizmadia, V. J. Nowlan, and D. G. Garratt, 2457.

The effect of temperature and solvent upon the addition of 4-chlorobenzenesulfonyl chloride to *cis*- and *trans*-1-phenylpropene. G. H. Schmid and V. M. Csizmadia, 2465.

Reaction of *N*-methyl-4-(2'-octoxy)pyridinium iodide with silver oxide. Evidence for a mechanism involving a pseudobase intermediate. G. H. Schmid and A. W. Wolkoff, 2511.

Schmidt, J.

Synthesis and reactions of strained hydrocarbons possessing inverted carbon atoms. Tetracyclo[3.3.1.1^{3,7}.0^{1,3}]decanes. R. E. Pincock, J. Schmidt, W. B. Scott, and E. J. Torupka, 3958.

Schneider, M.

Infrared studies on rotational isomerism. VI. Normal-coordinate analysis of 2-chloro-, 2-bromo-, and 2-cyanoethanol. P. A. Giguère and M. Schneider, 152.

Schöllhammer, G.

Branched-chain nitro sugars. Methyl 4,6-*O*-benzylidene-2,3-dideoxy-3-*C*-nitromethyl- α -D-ribo-hexopyranoside. A. Rosenthal and G. Schöllhammer, 1780.

Schrobilgen, G. J.

Urea-boron trihalide adducts. I. The boron trifluoride adduct of tetramethylurea. J. S. Hartman and G. J. Schrobilgen, 713.

Schuller, W. H.

The thermal behavior of some resin acids at 400–500 °C. R. F. Severson and W. H. Schuller, 2224.

Schwarcz, J. A.

Orientational dependance of vicinal and geminal ¹³C–¹H coupling. J. A. Schwarcz and A. S. Perlin, 3667.

Scott, J. M. W.

An examination of the heat capacity of activation for the hydrolysis of *t*-butyl chloride in water. J. M. W. Scott and R. E. Robertson, 167.

Studies in solvolysis. Part IV. Substituent and solvent isotope effects in the solvolysis of a series of benzyl trifluoroacetates. J. G. Winter and J. M. W. Scott, 1886.

Studies in solvolysis. Part V. Further investigations concerning the solvolysis of primary, secondary, and tertiary tribluoroacetates. D. J. Barnes, M. Cole, S. Lobo, J. G. Winter, and J. M. W. Scott, 2175.

Scott, W. B.

Synthesis and reactions of strained hydrocarbons possessing inverted carbon atoms. Tetracyclo[3.3.1.1^{3,7}.0^{1,3}]decanes. R. E. Pincock, J. Schmidt, W. B. Scott, and E. J. Torupka, 3958.

Secco, E. A.

Metal halide ammines. II. Thermal analyses, calorimetry, and infrared spectra of fluoride ammines and hydrates of bivalent metals. K. C. Patil and E. A. Secco, 567.

Complex fluorides with perovskite structure: thermal analyses, calorimetry, and infrared spectra. K. C. Patil and E. A. Secco, 1529.

Thermal transformation in anhydrous rare earth acetates. G. Adachi and E. A. Secco, 3100.

Seidl, V.

Pyrochlores. VIII. Studies of some 2–5 pyrochlores and related compounds and minerals. F. Brisse, D. J. Stewart, V. Seidl, and O. Knop, 3648.

Semeluk, G. P.

Spectrofluorometric studies. XI. Some aspects of the photochemistry of ortho-fused benzocycloalkenes. M. Grossman, R. Kubela, G. P. Semeluk, and I. Unger, 3298.

Senoff, C. V.

A kinetic study of the oxidative addition of substituted benzenethiols towards *trans*-halocarbonylbis(triphenylphosphine)-iridium(I). J. R. Gaylor and C. V. Senoff, 1868.

Erratum: A kinetic study of the oxidative addition of substituted benzenethiols towards *trans*-halocarbonylbis(triphenylphosphine)iridium(I). J. R. Gaylor and C. V. Senoff, 3085.

Sergent, M.

Total synthesis of (+)-occidentalol. M. Sergent, M. Mongrain, and P. Deslongchamps, 336.

Servé, M. P.

The elucidation of the coupling constants for the cyclobutane ring of the *trans*-fused 2-oxabicyclo[4.2.0]octane system. M. P. Servé, 3744.

Severson, R. F.

The thermal behavior of some resin acids at 400–500 °C. R. F. Severson and W. H. Schuller, 2224.

- Shaede, E. A.**
Trapped electrons and radicals in γ -irradiated propylene carbonate glasses. E. A. Shaede, 782.
- Shah, A. M.**
The hydrogenation of allene. IV. The reaction of allene with hydrogen catalyzed by palladium, platinum, iridium, rhodium, ruthenium, and osmium catalysts. R. A. Mann and A. M. Shah, 1793.
- Shamir, J.**
 ^{19}F nuclear magnetic resonance study of the difluorochlorine(III) cation, ClF_2^+ . M. Brownstein and J. Shamir, 3409.
- Shannon, R. D.**
Crystal structure of a new form of $\text{Cu}_3\text{V}_2\text{O}_8$. R. D. Shannon and C. Calvo, 3944.
- Shapiro, S. A.**
A critical test of the Hammett acidity function. K. Yates and S. A. Shapiro, 581.
- Sheikh, Y. M.**
Mass spectrometry in structural and stereochemical problems. CCXVII. Electron impact promoted fragmentation of *O*-methyl oximes of some α,β -unsaturated ketones and methyl substituted cyclohexanones. Y. M. Sheikh, R. J. Liedtke, A. M. Duffield, and C. Djerassi, 2776.
- Shen, M.**
A new photochemical reaction of unconjugated thioketones. J. J. Worman, M. Shen, and P. C. Nichols, 3923.
- Shim, S. C.**
Stereochemistry of the cycloaddition of singlet excited β -substituted styrenes to olefins. O. L. Chapman, R. D. Lura, R. M. Owens, E. D. Plank, S. C. Shim, D. R. Arnold, and L. B. Gillis, 1984.
- Shurvell, H. F.**
The infrared and Raman spectra of dimethyliodoarsine. H. F. Shurvell, M. R. Gold, and A. R. Norris, 2691.
- Siddiqui, Z. U.**
Tribarbonylchromium π -complexes of $\alpha\beta\gamma\delta$ -tetraphenylporphyrin and its metal chelates. N. J. Cogan and Z. U. Siddiqui, 720.
- Silk, P. J.**
The photodecomposition of an analogue of DDT. H. J. Liu, P. J. Silk, and I. Unger, 55.
- Sim, S. K.**
2,4-Diazapentadienes. I. Prototropy, cyclization, and addition-elimination. D. H. Hunter and S. K. Kim, 669.
2,4-Diazapentadienes. II. A carbanion cyclization. D. H. Hunter and S. K. Kim, 678.
- Simonnin, M. P.**
A nuclear magnetic resonance study of some 4-X-substituted-2,6-dinitroanisoles and related Meisenheimer 1,3- and 1,1-complexes. M. P. Simonin, M. J. Lecourt, F. Terrier, and C. A. Dearing, 3558.
- Singh, P. P.**
Infrared and electronic spectral studies of cobalt(II) and nickel (II) complexes of *N*-allyl urea and *N*-allyl thiourea. P. P. Singh and I. M. Pande, 2603.
- Sinha, D.**
Oriented polycrystal formation of halogen containing molecules on alkali halide windows and their usefulness in vibrational spectroscopic studies. J. E. Katon, D. Sinha, M. G. Griffin, and D. A. Condit, 3255.
- Sisi, J. C.**
Influence des paramètres géométriques sur la résistance d'une cellule électrolytique. J. C. Sisi, C. Dubeau et J. P. Pélissier, 2491.
- Skeaff, J. M.**
Theory of enthalpy of mixing in reactive charge asymmetrical molten salt systems. Part II. Ternary solutions. S. N. Flengas and J. M. Skeaff, 1345.
- Slager, T. L.**
Infrared investigation of H_2S adsorption and decomposition on alumina and on alumina supported molybdenum sulfide. T. L. Slager and C. H. Amberg, 3416.
- Slessor, K. N.**
The crystal and molecular structure of 3-chloro-3-deoxy-1,2:5,6-di-*O*-isopropylidene- β -D-idose. F. W. B. Einstein and K. N. Slessor, 93.
Conformational studies on the 1,2:5,6-di-*O*-isopropylidene-D-hexoses. L. D. Hall, S. A. Black, K. N. Slessor, and A. S. Tracey, 1912.
- Sloan, J. J.**
Erratum: Microwave spectrum and conformation of tetrahydropyran. V. M. Rao and R. Kewley, 955.
Erratum: Microwave spectrum of morpholine. J. J. Sloan and R. Kewley, 955.
- Slotin, L.**
Synthesis of 8,2'-thioanhydroguanosine. K. K. Ogilvie, L. Slotin, J. B. Westmore, and D. Lin, 1100.
A general synthesis of 8,2'-thioanhydropurine nucleosides. K. K. Ogilvie, L. Slotin, J. B. Westmore, and D. Lin, 2249.
Synthesis of 8,3-thioanhydroguanosine. K. K. Ogilvie, L. A. Slotin, D. C. K. Lin, and J. B. Westmore, 3276.
- Smith, R.**
Kinetic evidence for predominant oxygen protonation of amides. C. R. Smith and K. Yates, 771.

Smith, P. J.

Mass spectrometry of some nuclear substituted styryl ketones. P. J. Smith, J. R. Dimmock, and W. G. Taylor, 871.

Smith, W. MacF.

Carboxylate complexing of iron(III). I. The formation of monoacetatoiron(III) in aqueous solution: equilibria and kinetics. R. N. Pandey and W. MacF. Smith, 194.

Kinetics of the anation reaction of nickel(II) and 1,10-phenanthroline in ethanol. M. L. Sanduja and W. MacF. Smith, 3861.

Smula, V.

An unusual Oppenauer oxidation of (\pm) ophiocarpine. V. Smula, R. H. F. Manske, and R. Rodrigo, 1544.

Concentrine. IV. Acetolysis products of concentrine methiodide. R. Rodrigo, R. H. F. Manske, V. Smula, D. B. MacLean, and L. Baczynskyj, 3900.

Smyrl, T. G.

Mechanism of alcohol to ester rearrangement in phosphorus compounds. A. F. Janzen and T. G. Smyrl, 1205.

Snelling, D. R.

The ultraviolet flash photolysis of ozone and the reaction of $O(^1D)$ with H_2O . C. J. Fortin, D. R. Snelling, and A. Tardif, 2747.

Snodin, D. J.

The structure of the trihydroxyflavans from the acid-catalyzed rearrangement and dimerization of 3-carene-2,5-dione. I. W. J. Still and D. J. Snodin, 1276.

Snow, R. A.

Chemistry of proximal π -bond systems. Part I. Synthesis of vicinal exocyclic dimethylene hydrocarbons. D. N. Butler and R. A. Snow, 795.

Sonawane, H. R.

Sterically hindered aromatic compounds. III. Acid-catalyzed reactions of 2,4,6-tri-*t*-butyl- and 2-methyl-4,6-di-*t*-butyl-benzyl alcohols and chlorides. L. R. C. Barclay, H. R. Sonawane, and M. C. MacDonald, 281.

Sterically hindered aromatic compounds. IV. Solvolysis of *t*-butyl-, phenyl-, and trialkyl-benzyl chlorides in ethanol-water. Evidence for steric acceleration in 2,4,6-tri-*t*-butylbenzyl chloride. L. R. C. Barclay, H. R. Sonawane, and J. C. Hudson, 2318.

Sorensen, T. S.

Kinetics of pentadienyl cation cyclizations. R. Bladek and T. S. Sorensen, 2806.

Alkyl shifts in cyclohexenyl cations. K. Rajeswari and T. S. Sorensen, 2939.

Equilibria studies on tetraalkylcyclopentenyl cations. A steric origin for a Baker-Nathan order? K. Ranganayakulu and T. S. Sorensen, 3534.

Equilibria studies on tetraalkylcyclohexenyl cations. K. A. Ananthanarayan and T. S. Sorensen, 3550.

Soucy, P.

Ceric ammonium nitrate oxidation of cyclic ketones. P. Soucy, T.-L. Ho, and P. Deslongchamps, 2047.

Soussen-Jacob, J.

Etude des mouvements de molécules linéaires en phase liquide par analyse du profil des bandes d'absorption infrarouge. II. Bande γ_s du sulfure de carbonyle. A. M. Bize, J. Soussen-Jacob, J. Vincent-Geisse, D. Legay et J. P. Perchard, 217.

Sowa, W.

Epimerization of monosaccharides in acetic acid and acetic anhydride. Synthesis of D-altriose. W. Sowa, 1092.

Spenser, I. D.

Biosynthesis of lycopodine. Pelletierine as an obligatory intermediate. J.-C. Braekman, R. N. Gupta, D. B. MacLean, and I. D. Spenser, 2591.

Spillane, W. J.

Kinetics of sulfonation of phenylmethanesulfonic acid. Z. R. H. Nienhuis, W. J. Spillane, and H. Cerfontain, 1591.

Sprio, V.

Structure of grandiflorenic acid. F. Piozzi, S. Passannanti, M. L. Marino, and V. Sprio, 109.

Stanislaus, A.

Vapor phase catalytic transformations of terpene hydrocarbons in the $C_{10}H_{16}$ series. I. Isomerization of α -pinene over alumina. A. Stanislaus and L. M. Yeddnapalli, 61.

Vapor phase catalytic transformations of terpene hydrocarbons in the $C_{10}H_{16}$ series. II. Aromatization of α -pinene over chromia-alumina. A. Stanislaus and L. M. Yeddnapalli, 113.

Steck, W.

Paniculatin, a new coumarin from *Murraya paniculata* (L.) Jack. W. Steck, 443.

Steele, J. W.

Chloroacetylation of 1-azaphenothiazine. J. W. Steele, W. K. Anderson, and W. F. Trager, 1026.

Steger, H. F.

Anomalous ratios of formation constants: possible invalidity in the successive constants. H. F. Steger, 641.

Steiner, P. R.

Measurements of deuterium chemical shifts by 1H -(2H) INDOR spectroscopy. J. R. Campbell, L. D. Hall, and P. R. Steiner, 504.

Stevens, J. R.

Ammine complexes of osmium(II). A. D. Allen and J. R. Stevens, 3093.

- Stewart, D. J.**
Pyrochlores. VII. The oxides of antimony: an X-ray and Mössbauer study. D. J. Stewart, O. Knop, C. Ayasse, and F. W. D. Woodhams, 690.
Pyrochlores. VIII. Studies of some 2-5 pyrochlores and related compounds and minerals. F. Brisse, D. J. Stewart, V. Seidl, and O. Knop, 3648.
- Stewart, R.**
The hydration of ketones in mixtures of water and polar aprotic solvents. R. Stewart and J. D. Van Dyke, 1992.
Oxidations with potassium *trans*-1,2-diaminocyclohexanetetraacetatomanganate(III). I. Composition of the complex and the reaction with methanol. B. L. Poh and R. Stewart, 3432.
Oxidations with potassium *trans*-1,2-diaminocyclohexanetetraacetatomanganate(III). II. Reaction of the complex with hindered phenols. R. Stewart and B. L. Poh, 3437.
- Still, I. W. J.**
The structure of the trihydroxyflavans from the acid-catalyzed rearrangement and dimerization of 3-carene-2,5-dione. I. W. J. Still and D. J. Snodin, 1276.
- Stoessl, A.**
Stereochemistry of some altersolanol B derivatives and their correlation with bostrycin. M. Gordon, A. Stoessl, and J. B. Stothers, 122.
- Stojanac, N.**
Possible intermediates in the biosynthesis of porphyrins. J. M. Osgerby, J. Pluscec, Y. C. Kim, F. Boyer, N. Stojanac, H. D. Mah, and S. F. MacDonald, 2652.
- Stojanac, Z.**
A stereospecific synthesis of ring A-aromatic steroids. R. A. Dickinson, R. Kubela, G. A. MacAlpine, Z. Stojanac, and Z. Valenta, 2377.
- Stone, M. E.**
Electronic spectrum of cobalt(II) in sulfates. Part II. Equilibrium studies in Li_2SO_4 -DMSO solution and in NaHSO_4 - KHSO_4 melt. J. R. Dickinson and M. E. Stone, 2946.
- Storr, A.**
Gallium(III)-trisfluorosulfate. A. Storr, P. A. Yeats, and F. Aubke, 452.
- Stothers, J. B.**
Stereochemistry of some altersolanol B derivatives and their correlation with bostrycin. M. Gordon, A. Stoessl, and J. B. Stothers, 122.
 ^{13}C nuclear magnetic resonance studies. XVI. ^{13}C spectra of some substituted acrylic acids and their esters. A correlation of olefinic shieldings in α,β -unsaturated carbonyl systems. H. Brouwer and J. B. Stothers, 601.
The nature of the tricyclic dimer formed from acetylacetone and hydrazine: an application of ^{13}C nuclear magnetic resonance. P. de Mayo, J. B. Stothers, and M. C. Usselman, 612.
 ^{13}C nuclear magnetic resonance studies. XX. ^{13}C shieldings of several allyl alcohols. Geometric dependence of ^{13}C shieldings. H. Brouwer and J. B. Stothers, 1361.
A new indoline rearrangement. V. Dave, J. B. Stothers, and E. W. Warnhoff, 2475.
- Strathdee, G. G.**
Homogeneous catalysis of D_2 - H_2O isotope exchange by pentacyanocobaltate(II). G. G. Strathdee and M. J. Quinn, 3144.
- Suga, K.**
A new preparative method of 1,6-diketones from fatty acids and vinylmagnesium chloride. S. Watanabe, K. Suga, T. Fujita, and Y. Takahashi, 2786.
- Sugamori, S. E.**
The hydrolysis of *t*-butyl chloride in aquo-organic mixtures: heat capacity of activation and solvent structure. R. E. Robertson and S. E. Sugamori, 1353.
- Sullivan, D. E.**
Electrochemical oxidation of trifluoroacetic acid in an organic medium. I. Synthesis of trifluoroethane-1,1,1- d_3 and pentafluoropropane-1,1,1,1,1- d_5 . R. N. Renaud and D. E. Sullivan, 3084.
- Sullivan, P. D.**
An electron spin resonance study of the radical cations derived from dialkoxybiphenyls. P. D. Sullivan and L. J. Norman, 2141.
- Summers, W. R.**
Chemistry of the transition metals. II. Reaction of branched alkyl chlorides with titanium. W. R. Summers and J. F. Harrod, 2167.
- Sun, M. S.**
INDO-MO calculations and proton isotropic shifts of methyl-substituted pyridine ligands in Ni(II) complexes. M. S. Sun, F. Grein, and D. G. Brewer, 2626.
- Sundararajan, P. R.**
Conformational terminology for crystalline cellulose. P. R. Sundararajan and R. H. Marchessault, 792.
- Sunder, S.**
Erratum: Normal coordinate calculations of the vibrations of methylene cyclopropane- h_6 and - d_6 . J. E. Bertie and S. Sunder, 765.

Sutton, D.

The preparation, properties, and some complexes of anhydrous manganese(III) nitrate. D. W. Johnson and D. Sutton, 3326.

The crystal and molecular structure of trinitrato-2,2'-bipyridylmanganese (III): a complex with three distinctly different nitrate ligands. F. W. B. Einstein, D. W. Johnson, and D. Sutton, 3332.

Swaddle, T. W.

Mechanistic information on the aquations of complexes of the pentaamminecobalt(III) series from kinetic studies at high pressures. W. E. Jones, L. R. Carey, and T. W. Swaddle, 2739.

Symonds, V. B.

Relative rate of reaction of $O(^1D_2)$ with N_2O . G. Paraskevopoulos, V. B. Symonds, and R. J. Cvetanović, 183.

Symons, E. A.

Meisenheimer complex formation between 1,3,5-trinitrobenzene and hydroxide ion. Equilibrium constants for the dimethylformamide-water solvent system. E. A. Symons and E. Buncel, 1729.

Sytnyk, W.

Electron spin resonance study of the self-disproportionation of some semiquinone radicals in solution. S. K. Wong, W. Sytnyk, and J. K. S. Wan, 3052.

Szokolai, A.

The constituents of *Nauclea diderrichii*. Part III. Indole-pyridine alkaloids. D. G. Murray, A. Szokolai, and S. McLean, 1486.

Szarek, W. A.

Addition of pseudohalogens to unsaturated carbohydrates. V. Addition of iodine trifluoroacetate. R. G. S. Ritchie and W. A. Szarek, 507.

Szychowski, J.

Neothiobinupharidine sulfoxide, a new alkaloid of *Nuphar luteum*. J. T. Wróbel, A. Iwanow, J. Szychowski, J. Poplawski, C. K. Yu, T. I. Martin, and D. B. MacLean, 1968.

Taguchi, V. Y.

Synthesis of lambertianic acid. R. A. Bell, M. B. Gravestock, and V. Y. Taguchi, 3749.

Taillefer, R.

^{13}C chemical shifts of highly substituted bicyclo-[2.2.1]heptanes. N. H. Werstiuk, R. Taillefer, R. A. Bell, and B. G. Sayer, 2146.

Takahashi, Y.

A new preparative method of 1,6-diketones from fatty acids and vinylmagnesium chloride. S. Watanabe, K. Suga, T. Fujita, and Y. Takahashi, 2786.

Tam, J. N. S.

Photoreactions of nitroso compounds in solution. XX. Photoreduction, photoelimination, and photoaddition of nitrosamines. Y. L. Chow, M. P. Lau, R. A. Perry, and J. N. S. Tam, 1044.

Tan, B.-Y.

Ambident ligands. I. Phenylsulfoxyacetic acid. N. J. Gogan, M. J. Newlands, and B.-Y. Tan (Née Yap), 3202.

Tan, T. H.

The synthesis and structural studies of some dialkyltin(IV) salts of strong monobasic acids. T. H. Tan, J. R. Dalziel, P. A. Yeats, J. R. Sams, R. C. Thompson, and F. Aubke, 1843.

Tang, B. K.

The pyrolysis of some neopentyl xanthates: a competitive formation of olefins and dithiolcarbonates. K. G. Rutherford, B. K. Tang, L. K. M. Lam, and D. P. C. Fung, 3288.

Tanner, D. D.

An electron spin resonance examination of ferrocenyalkyl- and aryl ketyls. G. Bigam, J. Hooz, S. Linke, R. E. D. McClung, M. W. Mosher, and D. D. Tanner, 1825.

Tanner, G. M.

Coordination compounds of indium. Part XV. The stability constants of some trifluoromethyl- β -diketonate complexes of indium(III). K. Bowden, Mrs. G. M. Tanner, and D. G. Tuck, 2622.

Coordination compounds of indium. Part XIX. Ligand exchange studies with indium(III) complexes of trifluoromethyl- β -diketonates. G. M. Tanner, D. G. Tuck, and E. J. Wells, 3950.

Tapping, R. L.

An electron paramagnetic resonance study of a fast Lewis acid-base reaction between copper(II) *bis*-(diethyldithiocarbamate) and pyridine in benzene. J. B. Farmer, F. G. Herring, and R. L. Tapping, 2079.

Tardif, A.

The ultraviolet flash photolysis of ozone and the reaction of $O(^1D)$ with H_2O . C. J. Fortin, D. R. Snelling, and A. Tardif, 2747.

Tay, S. P.

Dielectric relaxation of bromoalkanes in cyclohexane solution. S. P. Tay and J. Crossley, 2031.

Taylor, G.

Thermal rearrangement of acyl groups in anhydronucleosides. A convenient synthesis of 5'-O-acetylanhydrouridine. K. K. Ogilvie, J. B. Westmore, G. Taylor, D. Lin, D. Iwacha, H. Wayborn, and G. E. Dunn, 2365.

- Taylor, W. G.**
Mass spectrometry of some nuclear substituted styryl ketones. P. J. Smith, J. R. Dimmock, and W. G. Taylor, 871.
- Teitel, S.**
A new synthesis of "Schöpfung's base VI" and related 10*H*-isoindolo[2,3-*c*]benzazepines. S. Teitel, W. Klötzer, J. Borgese, and A. Bossi, 2022.
The synthesis of two phenacetin metabolites. A. Focella, P. Heslin, and S. Teitel, 2025.
- Teng, T. T.**
A general relation between H_0 , acid concentration, and water activity for strong acids at moderate concentrations. T. T. Teng and F. Lenzi, 3283.
- Terrier, F.**
A nuclear magnetic resonance study of some 4-*X*-substituted-2,6-dinitroanisoles and related Meisenheimer 1,3- and 1,1-complexes. M. P. Simonnin, M. J. Lecourt, F. Terrier, and C. A. Dearing, 3558.
- Teruta, Y.**
The preparation and acetolyses of 5-deuteriated *exo*-2-norbornyl-*p*-bromobenzenesulfonates. N. H. Werstiuk, R. R. MacDonald, R. W. Ouwehand, W. L. Chan, F. P. Cappelli, J. G. Ballard, R. E. Young, R. E. Massey, G. Timmins, I. Goodwin, A. Walling, and Y. Teruta, 618.
- Tewari, P. H.**
Adsorption of Co^{2+} by oxides from aqueous solution. P. H. Tewari, A. B. Campbell, and W. Lee, 1642.
- Thanh, N.-V.**
Étude par spectrométrie i.r. des effets de solvant sur les fréquences fondamentales et harmoniques de l'acide iodhydrique. N.-V. Thanh et I. Rossi, 3411.
- Thé, K. I.**
Synthesis and properties of substituted germylhydrazines. L. K. Peterson and K. I. Thé, 553.
The reactions of substituted germyl- and silylhydrazines with BX_3 and CY_2 acceptor species. L. K. Peterson and K. I. Thé, 562.
- The, N. D.**
Vibrational spectra of SiH_4 and SiD_4 - SiH_4 mixtures in the condensed states. R. P. Fournier, R. Savoie, N. D. The, R. Belzile, and A. Cabana, 35.
Erratum: Vibrational spectra of SiH_4 and SiD_4 - SiH_4 mixtures in the condensed states. R. P. Fournier, R. Savoie, N. D. The, R. Belzile, and A. Cabana, 1442.
- Theophanides, T.**
A quantum chemical conformational analysis of the ethylenediamine molecule. N. Hadjiliadis, A. Diot, and T. Theophanides, 1005.
Complexes de platine avec des dérivés acétyléniques $\text{Pt}(\text{R}_1\text{R}_2\text{C}(\text{OH})-\text{C}\equiv\text{C}-\text{C}(\text{OH})\text{R}_1\text{R}_2)_2$. F. D. Rochon et T. Theophanides, 1325.
Zeise's salt, $\text{K}[\text{Pt}(\text{C}_2\text{H}_4)\text{Cl}_3]$ anhydrous and monohydrate and the platinum-olefin interaction. J. Hubert, P. C. Kong, F. D. Rochon, and T. Theophanides, 1596.
- Thimm, H.**
Kinetics and mechanism of decarboxylation of some pyridinecarboxylic acids in aqueous solution. G. E. Dunn, G. K. J. Lee, and H. Thimm, 3017.
- Thompson, J. C.**
Reactions of unsaturated compounds with silicon difluoride. Part I. Acetylene. C. S. Liu, J. L. Margrave, J. C. Thompson, and P. L. Timms, 459.
Reactions of silicon difluoride with unsaturated organic compounds. Part II. Alkyl substituted alkynes. C. S. Liu, J. L. Margrave, and J. C. Thompson, 465.
Nuclear magnetic resonance studies of some trimethyl tin carbamates. A. E. Lemire and J. C. Thompson, 1386.
- Thompson, R. C.**
The synthesis and structural studies of some dialkyltin(IV) salts of strong monobasic acids. T. H. Tan, J. R. Dalziel, P. A. Yeats, J. R. Sams, R. C. Thompson, and F. Aubke, 1843.
- Thorne, M. P.**
The thermal decomposition of *N*-arylcarbamates of *t*-alcohols. 2. Effects of solvent, temperature, and substituents. S. J. Ashcroft and M. P. Thorne, 3478.
- Thorpe, J. W.**
Acetate-catalyzed bromination and exchange reactions of 2-butanone. J. W. Thorpe and J. Warkentin, 3229.
Hydrogen isotope exchange in 2-butanone. Further measurements and some comments. R. A. Cox, J. W. Thorpe, and J. Warkentin, 3239.
- Timmins, G.**
Acid-catalyzed ring opening of halo-nortricyclanes. F. P. Cappelli, G. Timmins, and N. H. Werstiuk, 2163.
- Timmons, G.**
The preparation and acetolyses of 5-deuteriated *exo*-2-norbornyl-*p*-bromobenzenesulfonates. N. H. Werstiuk, R. R. MacDonald, R. W. Ouwehand, W. L. Chan, F. P. Cappelli, J. G. Ballard, R. E. Young, R. E. Massey, G. Timmins, I. Goodwin, A. Walling, and Y. Teruta, 618.

- Timms, P. L.**
Reactions of unsaturated compounds with silicon difluoride. Part I. Acetylene. C. S. Liu, J. L. Margrave, J. C. Thompson, and P. L. Timms, 459.
- Tipping, L.**
Photolysis of ammine and alkylamine chromium(III) complexes in water and dimethylsulfoxide: mechanistic evidence from luminescence and medium effects. C. H. Langford and L. Tipping, 887.
- Todd, D. K.**
Chemical shift. VII. The long-range shielding effects of the cyano group. J. W. ApSimon, H. Beierbeck, and D. K. Todd, 2351.
- Tomchuk, E.**
Electric moments and conformations of ortho-, meta-, and para- fluorobenzaldehyde. E. Bock and E. Tomchuk, 2890.
- Tomkiewicz, M.**
Photooxidation and decarboxylation of tyrosine studied by E.P.R. and C.I.D.N.P. techniques. M. Tomkiewicz, R. D. McAlpine, and M. Cocivera, 3849.
- Tomlinson, A. J.**
Studies on fluorinated vinylic and aromatic alcohols and esters. I. S. Chang, J. T. Price, A. J. Tomlinson, and C. J. Willis, 512.
Fully fluorinated alkoxides. Part VI. Derivatives of hydroxyhexafluoroisobutyric acid. J. T. Price, A. J. Tomlinson, and C. J. Willis, 939.
- Toriya, K.**
Pyrolysis of 3-chloro-3-aryldiazirines, kinetics and mechanism. M. T. H. Liu and K. Toriya, 3009.
- Torrie, G.**
Spin-orbit relaxation of $\text{Hg}(6^3\text{P}_1)$ by various gases. A. C. Vikis, G. Torrie, and D. J. LeRoy, 176.
- Torupka, E. J.**
Synthesis and reactions of strained hydrocarbons possessing inverted carbon atoms. Tetracyclo[3.3.1.1^{3,7}.0^{1,3}]decanes. R. E. Pincock, J. Schmidt, W. B. Scott, and E. J. Torupka, 3958.
- Tower, R.**
Spectroscopie de masse des *gem*-diesters épimères. K. Jankowski, J. Couturier et R. Tower, 1539.
- Trager, W. F.**
Chloroacetylation of 1-azaphenothiazine. J. W. Steele, W. K. Anderson, and W. F. Trager, 1026.
- Tracey, A. S.**
Conformational studies on the 1,2;5,6-di-*O*-isopropylidene-D-hexoses. L. D. Hall, S. A. Black, K. N. Slessor, and A. S. Tracey, 1912.
- Tsai, T. Y. R.**
The synthesis of delphinine: a stereoselective total synthesis of an optically active advanced relay compound. K. Wiesner, E. W. K. Jay, T. Y. R. Tsai, C. Demerson, L. Jay, T. Kanno, J. Křepinský, A. Vilim, and C. S. Wu, 1925.
- Tschuikow-Roux, E.**
Primary processes in the vacuum ultraviolet photolysis of ethyl fluoride at 147 nm. S. C. Chan, Y. Inel, and E. Tschuikow-Roux, 1443.
- Tuck, D. G.**
Coordination compounds of indium. Part XV. The stability constants of some trifluoromethyl- β -diketonate complexes of indium(III). K. Bowden, G. M. Tanner, and D. G. Tuck, 2622.
Coordination compounds of indium. Part XIX. Ligand exchange studies with indium(III) complexes of trifluoromethyl- β -diketonates. G. T. Tanner, D. G. Tuck, and E. J. Wells, 3950.
- Turner, G.**
Studies of β -diketone complexes of rhenium I. Tris(pentane-2,4-dionato)rhenium(III) and tris(1,1,1,5,5,5-hexafluoropentane-2,4-dionato)rhenium(III). W. D. Courrier, W. Forster, C. J. L. Lock, and G. Turner, 8.
Studies of β -diketone complexes of rhenium. Part II. Physical studies of dihalobis(pentane-2,4-dionato)rhenium(IV) compounds. W. D. Courrier, C. J. L. Lock, and G. Turner, 1797.
- Twigg, M. V.**
Synthesis and kinetic behavior of some *trans*-diacidotetraamminerhodium(III) complexes. A. J. Poë and M. V. Twigg, 1089.
- Tycholiz, D. R.**
Reactions of thyl radicals. VIII. Photolysis of methyl ethyl sulfide vapor. D. R. Tycholiz and A. R. Knight, 1734.
- Unger, D.**
Rearrangement studies with ^{14}C . XXXV. The absence of isotopic scrambling in the photolysis of 2- ^{14}C -3-phenylpropionaldehyde. C. C. Lee and D. Unger, 593.
Rearrangement studies with ^{14}C . XXXVI. Solvolysis of 1- ^{14}C -2-phenylethyl tosylate in aqueous acetic acid with or without added sodium azide. C. C. Lee, D. Unger, and S. Vassie, 1371.
- Unger, I.**
The photodecomposition of an analogue of DDT. H. J. Liu, P. J. Silk, and I. Unger, 55.
Spectrofluorometric studies. XI. Some aspects of the photochemistry of ortho-fused benzocycloalkenes. M. Grossman, R. Kubela, G. P. Semeluk, and I. Unger, 3298.

- Urbański, T.**
Charge transfer complexes with nitrate esters as electron acceptors. T. Urbański, B. Hetnarski, and W. Poludnikiewicz, 3340.
- Usselman, M. C.**
The nature of the tricyclic dimer formed from acetylacetone and hydrazine: an application of ^{13}C nuclear magnetic resonance. P. de Mayo, J. B. Stothers, and M. C. Usselman, 612.
- Valenta, Z.**
A stereospecific synthesis of ring A-aromatic steroids. R. A. Dickinson, R. Kubela, G. A. MacAlpine, Z. Stojanac, and Z. Valenta, 2377.
- Valleau, J. P.**
Hypersonic velocities in molten salts by Brillouin spectroscopy. V. C. Reinsborough and J. P. Valleau, 2704.
- van de Sande, J. H.**
Deuterium isotope effects in the oxidation of 2,3-dimethyl-2-butene via the bromohydroperoxide, by singlet oxygen and by triphenyl phosphite ozonide. K. R. Kopecky and J. H. van de Sande, 4034.
- van den Engh, M.**
The oxidation of 2-propanol by ruthenium tetroxide. D. G. Lee and M. van den Engh, 2000.
The oxidation of tetrahydrofuran by ruthenium tetroxide. D. G. Lee and M. van den Engh, 3129.
- Van Dyke, J. D.**
The hydration of ketones in mixtures of water and polar aprotic solvents. R. Stewart and J. D. Van Dyke, 1992.
- Vancas, I.**
Addition of ICl to norbornene. The preparation and photochemical isomerization of *syn*-7-iodonorbornene. N. H. Werstiuk, I. Vancas, J. Warkentin, and F. R. S. Clark, 291.
- Varshney, K. G.**
Synthesis and ion exchange properties of thermally stable titanium(IV) vanadate: separation of Sr^{2+} from Ca^{2+} , Ba^{2+} , and Mg^{2+} . M. Qureshi, K. G. Varshney, and S. K. Kabiruddin, 2071.
- Vassie, S.**
Rearrangement studies with ^{14}C . XXXVI. Solvolysis of 1- ^{14}C -2-phenylethyl tosylate in aqueous acetic acid with or without added sodium azide. C. C. Lee, D. Unger, and S. Vassie, 1371.
- Vasudev, P.**
An ^{129}I Mössbauer study of novel polyhalogen ions formed by radioactive decay in the tellurium halides. J. J. Johnstone, C. H. W. Jones, and P. Vasudev, 3037.
The ^{125}Te Mössbauer absorption spectra of the thiourea, ethylenethiourea, and tetramethylthiourea derivatives of tellurium(II) and tellurium(IV). B. M. Cheyne, C. H. W. Jones, and P. Vasudev, 3677.
- Vaughan, K.**
Triazine intermediates in the decomposition of 1-(*o*-carbethoxyphenyl)-3-(*o*-cyanophenyl)-triazene in aqueous ethanol. K. Vaughan, 1775.
Synthesis and reactions of 1-alkyl-3-(*o*-carbalkoxyphenyl)-triazenes. R. J. LeBlanc and K. Vaughan, 2544.
- Vidarthi, S. K.**
A transient intermediate in the bimolecular reaction of hydrated electrons. N. Basco, G. A. Kenney-Wallace, S. K. Vidyarthi, and D. C. Walker, 2059.
- Vikis, A. C.**
Spin-orbit relaxation of $\text{Hg}(6^3\text{P}_1)$ by various gases. A. C. Vikis, G. Torrie, and D. J. LeRoy, 176.
The role of HgH in the $\text{Hg}(6^3\text{P}_0)$ photosensitized decomposition of the alkanes and hydrogen. A. C. Vikis and D. J. LeRoy, 595.
- Vilim, A.**
The synthesis of delphinine: a stereoselective total synthesis of an optically active advanced relay compound. K. Wiesner, E. W. K. Jay, T. Y. R. Tsai, C. Demerson, L. Jay, T. Kanno, J. Křepinský, A. Vilim, and C. S. Wu, 1925.
- Vincent, A.**
Selectivity in NBS bromination. I. The reaction of methyl enol ethers of cyclohexane-1,3-diones. A reexamination. D. V. C. Awang, A. Vincent, W. L. Wilson, and H. W. Avdovich, 104.
- Vincent-Geisse, J.**
Etude des mouvements de molécules linéaires en phase liquide par analyse du profil des bandes d'absorption infrarouge. II. Bande γ_3 du sulfure de carbonyle. A. M. Bize, J. Soussen-Jacob, J. Vincent-Geisse, D. Legay et J. P. Perchard, 217.
- Vining, L. C.**
Mass spectra of some tropolones and tropolone methyl ethers. J. L. C. Wright, W. D. Jamieson, S. Safe, and L. C. Vining, 821.
- Vinot, N.**
The electrochemical reduction of compounds with the $-\text{N}=\text{C}-\text{C}=\text{N}-$ group. III. *as*-Triazines. J. Pinson, J.-P. M'Packo, N. Vinot, J. Armand, and P. Bassinet, 1581.
- Vo Van, K. V.**
Identification and thermal stability of copper(I) sulfate. K. Vo Van and F. Habashi, 3872.
- Vocelle, D.**
Reactions of chloramines with $\text{Ag}(0)$ and $\text{Ag}(I)$ states. O. E. Edwards, D. Vocelle, and J. W. ApSimon, 1167.

Sutton, D.

The preparation, properties, and some complexes of anhydrous manganese(III) nitrate. D. W. Johnson and D. Sutton, 3326.

The crystal and molecular structure of trinitrato-2,2'-bipyridylmanganese (III): a complex with three distinctly different nitrate ligands. F. W. B. Einstein, D. W. Johnson, and D. Sutton, 3332.

Swaddle, T. W.

Mechanistic information on the aquations of complexes of the pentaamminecobalt(III) series from kinetic studies at high pressures. W. E. Jones, L. R. Carey, and T. W. Swaddle, 2739.

Symonds, V. B.

Relative rate of reaction of $O(^1D_2)$ with N_2O . G. Paraskevopoulos, V. B. Symonds, and R. J. Cvetanović, 183.

Symons, E. A.

Meisenheimer complex formation between 1,3,5-trinitrobenzene and hydroxide ion. Equilibrium constants for the dimethylformamide-water solvent system. E. A. Symons and E. Buncl, 1729.

Sytnyk, W.

Electron spin resonance study of the self-disproportionation of some semiquinone radicals in solution. S. K. Wong, W. Sytnyk, and J. K. S. Wan, 3052.

Szokolai, A.

The constituents of *Nauclea diderrichii*. Part III. Indole-pyridine alkaloids. D. G. Murray, A. Szokolai, and S. McLean, 1486.

Szarek, W. A.

Addition of pseudohalogens to unsaturated carbohydrates. V. Addition of iodine trifluoroacetate. R. G. S. Ritchie and W. A. Szarek, 507.

Szychowski, J.

Neothibonapharidine sulfoxide, a new alkaloid of *Nuphar luteum*. J. T. Wróbel, A. Iwanow, J. Szychowski, J. Poplawski, C. K. Yu, T. I. Martin, and D. B. MacLean, 1968.

Taguchi, V. Y.

Synthesis of lambertianic acid. R. A. Bell, M. B. Gravestock, and V. Y. Taguchi, 3749.

Taillefer, R.

^{13}C chemical shifts of highly substituted bicyclo-[2.2.1]heptanes. N. H. Werstiuk, R. Taillefer, R. A. Bell, and B. G. Sayer, 2146.

Takahashi, Y.

A new preparative method of 1,6-diketones from fatty acids and vinylmagnesium chloride. S. Watanabe, K. Suga, T. Fujita, and Y. Takahashi, 2786.

Tam, J. N. S.

Photoreactions of nitroso compounds in solution. XX. Photoreduction, photoelimination, and photoaddition of nitrosamines. Y. L. Chow, M. P. Lau, R. A. Perry, and J. N. S. Tam, 1044.

Tan, B.-Y.

Ambident ligands. I. Phenylsulfoxyacetic acid. N. J. Gogan, M. J. Newlands, and B.-Y. Tan (Neé Yap), 3202.

Tan, T. H.

The synthesis and structural studies of some dialkyltin(IV) salts of strong monobasic acids. T. H. Tan, J. R. Dalziel, P. A. Yeats, J. R. Sams, R. C. Thompson, and F. Aubke, 1843.

Tang, B. K.

The pyrolysis of some neopentyl xanthates: a competitive formation of olefins and dithiolcarbonates. K. G. Rutherford, B. K. Tang, L. K. M. Lam, and D. P. C. Fung, 3288.

Tanner, D. D.

An electron spin resonance examination of ferrocenylalkyl- and aryl ketals. G. Bigam, J. Hooz, S. Linke, R. E. D. McClung, M. W. Mosher, and D. D. Tanner, 1825.

Tanner, G. M.

Coordination compounds of indium. Part XV. The stability constants of some trifluoromethyl- β -diketonate complexes of indium(III). K. Bowden, Mrs. G. M. Tanner, and D. G. Tuck, 2622.

Coordination compounds of indium. Part XIX. Ligand exchange studies with indium(III) complexes of trifluoromethyl- β -diketonates. G. M. Tanner, D. G. Tuck, and E. J. Wells, 3950.

Tapping, R. L.

An electron paramagnetic resonance study of a fast Lewis acid-base reaction between copper(II) bis-(diethyldithiocarbamate) and pyridine in benzene. J. B. Farmer, F. G. Herring, and R. L. Tapping, 2079.

Tardif, A.

The ultraviolet flash photolysis of ozone and the reaction of $O(^1D)$ with H_2O . C. J. Fortin, D. R. Snelling, and A. Tardif, 2747.

Tay, S. P.

Dielectric relaxation of bromoalkanes in cyclohexane solution. S. P. Tay and J. Crossley, 2031.

Taylor, G.

Thermal rearrangement of acyl groups in anhydronucleosides. A convenient synthesis of 5'-O-acetylanhydrouridine. K. K. Ogilvie, J. B. Westmore, G. Taylor, D. Lin, D. Iwacha, H. Wayborn, and G. E. Dunn, 2365.

- Taylor, W. G.**
Mass spectrometry of some nuclear substituted styryl ketones. P. J. Smith, J. R. Dimmock, and W. G. Taylor, 871.
- Teitel, S.**
A new synthesis of "Schöpf's base VI" and related 10*H*-isindolo[2,3-*c*]benzazepines. S. Teitel, W. Klötzer, J. Borgese, and A. Brossi, 2022.
The synthesis of two phenacetin metabolites. A. Focella, P. Heslin, and S. Teitel, 2025.
- Teng, T. T.**
A general relation between H_0 , acid concentration, and water activity for strong acids at moderate concentrations. T. T. Teng and F. Lenzi, 3283.
- Terrier, F.**
A nuclear magnetic resonance study of some 4-*X*-substituted-2,6-dinitroanisoles and related Meisenheimer 1,3- and 1,1-complexes. M. P. Simonnin, M. J. Lecourt, F. Terrier, and C. A. Dearing, 3558.
- Teruta, Y.**
The preparation and acetolyses of 5-deuteriated *exo*-2-norbornyl-*p*-bromobenzenesulfonates. N. H. Werstiuk, R. R. MacDonald, R. W. Ouwehand, W. L. Chan, F. P. Cappelli, J. G. Ballard, R. E. Young, R. E. Massey, G. Timmins, I. Goodwin, A. Walling, and Y. Teruta, 618.
- Tewari, P. H.**
Adsorption of Co^{2+} by oxides from aqueous solution. P. H. Tewari, A. B. Campbell, and W. Lee, 1642.
- Thanh, N.-V.**
Étude par spectrométrie i.r. des effets de solvant sur les fréquences fondamentales et harmoniques de l'acide iodhydrique. N.-V. Thanh et I. Rossi, 3411.
- Thé, K. I.**
Synthesis and properties of substituted germlyhydrazines. L. K. Peterson and K. I. Thé, 553.
The reactions of substituted germly- and silylhydrazines with BX_3 and CY_2 acceptor species. L. K. Peterson and K. I. Thé, 562.
- The, N. D.**
Vibrational spectra of SiH_4 and SiD_4 - SiH_4 mixtures in the condensed states. R. P. Fournier, R. Savoie, N. D. The, R. Belzile, and A. Cabana, 35.
Erratum: Vibrational spectra of SiH_4 and SiD_4 - SiH_4 mixtures in the condensed states. R. P. Fournier, R. Savoie, N. D. The, R. Belzile, and A. Cabana, 1442.
- Theophanides, T.**
A quantum chemical conformational analysis of the ethylenediamine molecule. N. Hadjiladis, A. Diot, and T. Theophanides, 1005.
Complexes de platine avec des dérivés acétyléniques $\text{Pt}(\text{R}_1\text{R}_2\text{C}(\text{OH})-\text{C}\equiv\text{C}-\text{C}(\text{OH})\text{R}_1\text{R}_2)_2$. F. D. Rochon et T. Theophanides, 1325.
Zeise's salt, $\text{K}[\text{Pt}(\text{C}_2\text{H}_4)\text{Cl}_3]$ anhydrous and monohydrate and the platinum-olefin interaction. J. Hubert, P. C. Kong, F. D. Rochon, and T. Theophanides, 1596.
- Thimm, H.**
Kinetics and mechanism of decarboxylation of some pyridinecarboxylic acids in aqueous solution. G. E. Dunn, G. K. J. Lee, and H. Thimm, 3017.
- Thompson, J. C.**
Reactions of unsaturated compounds with silicon difluoride. Part I. Acetylene. C. S. Liu, J. L. Margrave, J. C. Thompson, and P. L. Timms, 459.
Reactions of silicon difluoride with unsaturated organic compounds. Part II. Alkyl substituted alkynes. C. S. Liu, J. L. Margrave, and J. C. Thompson, 465.
Nuclear magnetic resonance studies of some trimethyl tin carbamates. A. E. Lemire and J. C. Thompson, 1386.
- Thompson, R. C.**
The synthesis and structural studies of some dialkyltin(IV) salts of strong monobasic acids. T. H. Tan, J. R. Dalziel, P. A. Yeats, J. R. Sams, R. C. Thompson, and F. Aubke, 1843.
- Thorne, M. P.**
The thermal decomposition of *N*-arylcabamates of *t*-alcohols. 2. Effects of solvent, temperature, and substituents. S. J. Ashcroft and M. P. Thorne, 3478.
- Thorpe, J. W.**
Acetate-catalyzed bromination and exchange reactions of 2-butanone. J. W. Thorpe and J. Warkentin, 3229.
Hydrogen isotope exchange in 2-butanone. Further measurements and some comments. R. A. Cox, J. W. Thorpe, and J. Warkentin, 3239.
- Timmins, G.**
Acid-catalyzed ring opening of halo-nortricyclanes. F. P. Cappelli, G. Timmins, and N. H. Werstiuk, 2163.
- Timmons, G.**
The preparation and acetolyses of 5-deuteriated *exo*-2-norbornyl-*p*-bromobenzenesulfonates. N. H. Werstiuk, R. R. MacDonald, R. W. Ouwehand, W. L. Chan, F. P. Cappelli, J. G. Ballard, R. E. Young, R. E. Massey, G. Timmins, I. Goodwin, A. Walling, and Y. Teruta, 618.

- Timms, P. L.**
Reactions of unsaturated compounds with silicon difluoride. Part I. Acetylene. C. S. Liu, J. L. Margrave, J. C. Thompson, and P. L. Timms, 459.
- Tipping, L.**
Photolysis of ammine and alkylamine chromium(III) complexes in water and dimethylsulfoxide: mechanistic evidence from luminescence and medium effects. C. H. Langford and L. Tipping, 887.
- Todd, D. K.**
Chemical shift. VII. The long-range shielding effects of the cyano group. J. W. ApSimon, H. Beierbeck, and D. K. Todd, 2351.
- Tomchuk, E.**
Electric moments and conformations of ortho-, meta-, and para- fluorobenzaldehyde. E. Bock and E. Tomchuk, 2890.
- Tomkiewicz, M.**
Photooxidation and decarboxylation of tyrosine studied by E.P.R. and C.I.D.N.P. techniques. M. Tomkiewicz, R. D. McAlpine, and M. Cocivera, 3849.
- Tomlinson, A. J.**
Studies on fluorinated vinylic and aromatic alcohols and esters. I. S. Chang, J. T. Price, A. J. Tomlinson, and C. J. Willis, 512.
Fully fluorinated alkoxydes. Part VI. Derivatives of hydroxyhexafluoroisobutyric acid. J. T. Price, A. J. Tomlinson, and C. J. Willis, 939.
- Toriyama, K.**
Pyrolysis of 3-chloro-3-aryldiazirines, kinetics and mechanism. M. T. H. Liu and K. Toriyama, 3009.
- Torrie, G.**
Spin-orbit relaxation of $\text{Hg}(6^3\text{P}_1)$ by various gases. A. C. Vikis, G. Torrie, and D. J. LeRoy, 176.
- Torupka, E. J.**
Synthesis and reactions of strained hydrocarbons possessing inverted carbon atoms. Tetracyclo[3.3.1.1^{3,7}.0^{1,3}]decenes. R. E. Pincock, J. Schmidt, W. B. Scott, and E. J. Torupka, 3958.
- Tower, R.**
Spectroscopie de masse des *gem*-diesters épimères. K. Jankowski, J. Couturier et R. Tower, 1539.
- Trager, W. F.**
Chloroacetylation of 1-azaphenothiazine. J. W. Steele, W. K. Anderson, and W. F. Trager, 1026.
- Tracey, A. S.**
Conformational studies on the 1,2;5,6-di-*O*-isopropylidene-D-hexoses. L. D. Hall, S. A. Black, K. N. Slessor, and A. S. Tracey, 1912.
- Tsai, T. Y. R.**
The synthesis of delphinine: a stereoselective total synthesis of an optically active advanced relay compound. K. Wiesner, E. W. K. Jay, T. Y. R. Tsai, C. Demerson, L. Jay, T. Kanno, J. Křepinský, A. Vilim, and C. S. Wu, 1925.
- Tschuikow-Roux, E.**
Primary processes in the vacuum ultraviolet photolysis of ethyl fluoride at 147 nm. S. C. Chan, Y. Inel, and E. Tschuikow-Roux, 1443.
- Tuck, D. G.**
Coordination compounds of indium. Part XV. The stability constants of some trifluoromethyl- β -diketonate complexes of indium(III). K. Bowden, G. M. Tanner, and D. G. Tuck, 2622.
Coordination compounds of indium. Part XIX. Ligand exchange studies with indium(III) complexes of trifluoromethyl- β -diketonates. G. T. Tanner, D. G. Tuck, and E. J. Wells, 3950.
- Turner, G.**
Studies of β -diketone complexes of rhenium I. Tris(pentane-2,4-dionato)rhenium(III) and tris(1,1,1,5,5,5-hexafluoropentane-2,4-dionato)rhenium(III). W. D. Courrier, W. Forster, C. J. L. Lock, and G. Turner, 8.
Studies of β -diketone complexes of rhenium. Part II. Physical studies of dihalobis(pentane-2,4-dionato)rhenium(IV) compounds. W. D. Courrier, C. J. L. Lock, and G. Turner, 1797.
- Twigg, M. V.**
Synthesis and kinetic behavior of some *trans*-diacidotetraamminerhodium(III) complexes. A. J. Poë and M. V. Twigg, 1089.
- Tycholiz, D. R.**
Reactions of thiyl radicals. VIII. Photolysis of methyl ethyl sulfide vapor. D. R. Tycholiz and A. R. Knight, 1734.
- Unger, D.**
Rearrangement studies with ¹⁴C. XXXV. The absence of isotopic scrambling in the photolysis of 2-¹⁴C-3-phenylpropionaldehyde. C. C. Lee and D. Unger, 593.
Rearrangement studies with ¹⁴C. XXXVI. Solvolysis of 1-¹⁴C-2-phenylethyl tosylate in aqueous acetic acid with or without added sodium azide. C. C. Lee, D. Unger, and S. Vassie, 1371.
- Unger, I.**
The photodecomposition of an analogue of DDT. H. J. Liu, P. J. Silk, and I. Unger, 55.
Spectrofluorometric studies. XI. Some aspects of the photochemistry of ortho-fused benzocycloalkenes. M. Grossman, R. Kubela, G. P. Semeluk, and I. Unger, 3298.

- Urbański, T.**
Charge transfer complexes with nitrate esters as electron acceptors. T. Urbański, B. Hetnarski, and W. Poludnikiewicz, 3340.
- Usselman, M. C.**
The nature of the tricyclic dimer formed from acetylacetone and hydrazine: an application of ^{13}C nuclear magnetic resonance. P. de Mayo, J. B. Stothers, and M. C. Usselman, 612.
- Valenta, Z.**
A stereospecific synthesis of ring A-aromatic steroids. R. A. Dickinson, R. Kubela, G. A. MacAlpine, Z. Stojanac, and Z. Valenta, 2377.
- Valleau, J. P.**
Hypersonic velocities in molten salts by Brillouin spectroscopy. V. C. Reinsborough and J. P. Valleau, 2704.
- van de Sande, J. H.**
Deuterium isotope effects in the oxidation of 2,3-dimethyl-2-butene via the bromohydroperoxide, by singlet oxygen and by triphenyl phosphite ozonide. K. R. Kopecky and J. H. van de Sande, 4034.
- van den Engh, M.**
The oxidation of 2-propanol by ruthenium tetroxide. D. G. Lee and M. van den Engh, 2000.
The oxidation of tetrahydrofuran by ruthenium tetroxide. D. G. Lee and M. van den Engh, 3129.
- Van Dyke, J. D.**
The hydration of ketones in mixtures of water and polar aprotic solvents. R. Stewart and J. D. Van Dyke, 1992.
- Vancas, I.**
Addition of ICl to norbornene. The preparation and photochemical isomerization of *syn*-7-iodonorbornene. N. H. Werstiuk, I. Vancas, J. Warkentin, and F. R. S. Clark, 291.
- Varshney, K. G.**
Synthesis and ion exchange properties of thermally stable titanium(IV) vanadate: separation of Sr^{2+} from Ca^{2+} , Ba^{2+} , and Mg^{2+} . M. Qureshi, K. G. Varshney, and S. K. Kabiruddin, 2071.
- Vassie, S.**
Rearrangement studies with ^{14}C . XXXVI. Solvolysis of 1- ^{14}C -2-phenylethyl tosylate in aqueous acetic acid with or without added sodium azide. C. C. Lee, D. Unger, and S. Vassie, 1371.
- Vasudev, P.**
An ^{129}I Mössbauer study of novel polyhalogen ions formed by radioactive decay in the tellurium halides. J. J. Johnstone, C. H. W. Jones, and P. Vasudev, 3037.
The ^{125}Te Mössbauer absorption spectra of the thiourea, ethylenethiourea, and tetramethylthiourea derivatives of tellurium(II) and tellurium(IV). B. M. Cheyne, C. H. W. Jones, and P. Vasudev, 3677.
- Vaughan, K.**
Triazine intermediates in the decomposition of 1-(*o*-carbethoxyphenyl)-3-(*o*-cyanophenyl)-triazene in aqueous ethanol. K. Vaughan, 1775.
Synthesis and reactions of 1-alkyl-3-(*o*-carbethoxyphenyl)-triazenes. R. J. LeBlanc and K. Vaughan, 2544.
- Vidyarathi, S. K.**
A transient intermediate in the bimolecular reaction of hydrated electrons. N. Basco, G. A. Kenney-Wallace, S. K. Vidyarathi, and D. C. Walker, 2059.
- Vikis, A. C.**
Spin-orbit relaxation of $\text{Hg}(6^3\text{P}_1)$ by various gases. A. C. Vikis, G. Torrie, and D. J. LeRoy, 176.
The role of HgH in the $\text{Hg}(6^3\text{P}_0)$ photosensitized decomposition of the alkanes and hydrogen. A. C. Vikis and D. J. LeRoy, 595.
- Vilim, A.**
The synthesis of delphinine: a stereoselective total synthesis of an optically active advanced relay compound. K. Wiesner, E. W. K. Jay, T. Y. R. Tsai, C. Demerson, L. Jay, T. Kanno, J. Křepinský, A. Vilim, and C. S. Wu, 1925.
- Vincent, A.**
Selectivity in NBS bromination. I. The reaction of methyl enol ethers of cyclohexane-1,3-diones. A reexamination. D. V. C. Awang, A. Vincent, W. L. Wilson, and H. W. Avdovich, 104.
- Vincent-Geisse, J.**
Etude des mouvements de molécules linéaires en phase liquide par analyse du profil des bandes d'absorption infrarouge. II. Bande γ_3 du sulfure de carbonyle. A. M. Bize, J. Soussen-Jacob, J. Vincent-Geisse, D. Legay et J. P. Perchard, 217.
- Vining, L. C.**
Mass spectra of some tropolones and tropolone methyl ethers. J. L. C. Wright, W. D. Jamieson, S. Safe, and L. C. Vining, 821.
- Vinot, N.**
The electrochemical reduction of compounds with the $-\text{N}=\text{C}-\text{C}=\text{N}-$ group. III. *as*-Triazines. J. Pinson, J.-P. M'Packo, N. Vinot, J. Armand, and P. Bassinet, 1581.
- Vo Van, K. V.**
Identification and thermal stability of copper(I) sulfate. K. Vo Van and F. Habashi, 3872.
- Vocelle, D.**
Reactions of chloramines with Ag(0) and Ag(I) states. O. E. Edwards, D. Vocelle, and J. W. ApSimon, 1167.

- Voorspuy, W. A. Z.**
Sulfonation and isomerization of some halogenobenzenesulfonic acids. H. Cerfontain, A. Koeberg-Telder, and W. A. Z. Voorspuy, 1574.
- Vos, A.**
The crystal structure of potassium hydrogeniodate (V), $\text{KIO}_3 \cdot \text{HIO}_3$. G. Kemper, A. Vos, and H. M. Rietveld, 1134.
- Vu Cong, D.**
Réaction du sulfure de bore avec quelques composés difonctionnels. S. Jerumanis, P. A. Begin et D. Vu Cong, 1675.
- Walker, D. C.**
A transient intermediate in the bimolecular reaction of hydrated electrons. N. Basco, G. A. Kenney-Wallace, S. K. Vidyarthi, and D. C. Walker, 2059.
- Walker, S.**
Dielectric studies. Part XXXII. Detection of high frequency absorption from microwave data. G. D. Martin and S. Walker, 707.
Examination of two theories for absorption of microwave and far infrared radiation by polar liquids. M. Benson, G. D. Martin, S. Walker, J. Warren, and R. Wilson, 2610.
Dielectric studies. Part XXXIV. Relaxation evidence for complex formation of 1,4-dioxan with chelated ring systems. M. D. Magee and S. Walker, 2799.
- Walkley, J.**
Studies in solubility parameter theory for mixed solvent systems. A. Purkayastha and J. Walkley, 834.
- Walling, A.**
The preparation and acetylises of 5-deuteriated *exo*-2-norbornyl-*p*-bromobenzenesulfonates. N. H. Werstiuk, R. R. MacDonald, R. W. Ouwehand, W. L. Chan, F. P. Cappelli, J. G. Ballard, R. E. Young, R. E. Massey, G. Timmins, I. Goodwin, A. Walling, and Y. Teruta, 618.
- Walton, R. A.**
Studies of metal carboxylates. Part II. Cobalt(II) and nickel(II) complexes of certain pyridine carboxylic acids and pyridine-3-sulfonic acid: magnetic and spectral studies. A. Anagnostopoulos, R. W. Matthews, and R. A. Walton, 1307.
- Wan, J. K. S.**
Organic free radical and metal complexes. 2,2-Diphenyl-1-picrylhydrazyl and Cu(I). F. Leh and J. K. S. Wan, 999.
Electron spin resonance of γ -irradiated acetylacetone in adamantane matrix. W. H. Wolodarsky and J. K. S. Wan, 1096.
Electron spin resonance study of the self-disproportionation of some semiquinone radicals in solution. S. K. Wong, W. Sytnyk, and J. K. S. Wan, 3052.
- Wang, F. M.**
Assessment of free radical catalysis in thermal methyl isocyanide isomerization. Variation of inert gas efficiency with k/k_m . T. Fujimoto, F. M. Wang, and B. S. Rabinovitch, 3251.
- Ward, B.**
Chemical reactions of methane in a triboelectric discharge. W. G. Alcock, E. J. Hayward, B. Mile, and B. Ward, 3813.
- Warkentin, J.**
Addition of ICI to norbornene. The preparation and photochemical isomerization of *syn*-7-iodonorbornene. N. H. Werstiuk, I. Vancas, J. Warkentin, and F. R. S. Clark, 291.
Thermolysis of γ -phenylazo- γ -valerolactone. H. Lui and J. Warkentin, 1767.
Thermolysis of Δ^3 -1,3,4-oxadiazolin-2-ones. S. L. Lee, A. M. Cameron, and J. Warkentin, 2326.
Acetate-catalyzed bromination and exchange reactions of 2-butanone. J. W. Thorpe and J. Warkentin, 3229.
Kinetics of bromination of acetone, bromoacetone, and 1,1-dibromoacetone. R. A. Cox and J. Warkentin, 3233.
Hydrogen isotope exchange in 2-butanone. Further measurements and some comments. R. A. Cox, J. W. Thorpe, and J. Warkentin, 3239.
Effects of bromine substituents on rates of acetate-promoted enolization of ketones. R. A. Cox and J. Warkentin, 3242.
Oxidation of semicarbazones of ketones. Improved synthesis of Δ^3 -1,3,4-oxadiazolin-2-ones. P. Knittel, S. L. Lee, and J. Warkentin, 3248.
Oxidation of *p*-dimethylaminobenzaldehyde semicarbazone. Novel conversion of an aromatic aldehyde to an aryl cyanide. P. Knittel and J. Warkentin, 4066.
- Warnhoff, E. W.**
Hindered rotation in an *o*-substituted acetophenone. V. Dave and E. W. Warnhoff, 2470.
A new indoline rearrangement. V. Dave, J. B. Stothers, and E. W. Warnhoff, 2475.
The oxygenation of 2-oxazolin-5-ones: a new synthesis of imides. R. Bisson, R. B. Yeats, and E. W. Warnhoff, 2851.
Reaction of *N*-acetyl-2,3-diphenylindole with nitric acid. V. Dave and E. W. Warnhoff, 3392.
- Warren, J.**
Examination of two theories for absorption of microwave and far infrared radiation by polar liquids. M. Benson, G. D. Martin, S. Walker, J. Warren, and R. Wilson, 2610.
- Wasylishen, R.**
Proton magnetic resonance spectra, conformational preferences, and approximate molecular orbital calculations for the *syn* and *anti* 2-furanaldoximes. R. Wasylishen and T. Schaefer, 274.
INDO molecular orbital calculations on the conformational dependence of long-range spin-spin coupling of methyl protons in toluene, *p*-fluorotoluene, and the xylenes. R. Wasylishen and T. Schaefer, 1852.

- Long-range spin-spin coupling constants from amino protons and ^{15}N to ring protons in aniline- ^{15}N and some derivatives. INDO molecular orbital calculations. R. Wasylishen, J. B. Rowbotham, L. Ernst, and T. Schaefer, 2575.
- INDO MO calculations of the conformational dependence of the vicinal ^{13}C ,H spin-spin coupling constant in propane. R. Wasylishen and T. Schaefer, 2710.
- INDO molecular orbital calculations of nitrogen-proton spin-spin coupling constants over two and three bonds. Effects of lone-pair orientation, of dihedral angles, and of protonation. R. Wasylishen and T. Schaefer, 2989.
- Watanabe, S.**
A new preparative method of 1,6-diketones from fatty acids and vinylmagnesium chloride. S. Watanabe, K. Suga, T. Fujita, and Y. Takahashi, 2786.
- Watkins, K. W.**
On the rate constant for *n*-pentyl radical isomerization. K. W. Watkins, 3738.
- Watts, H.**
Diffusion of some hydrocarbons in air: a regularity in the diffusion coefficients of a homologous series. R. W. Elliott and H. Watts, 31.
- Wauchope, R. D.**
Aqueous solutions of nonpolar compounds. Heat-capacity effects. R. D. Wauchope and R. Haque, 133.
- Wayborn, H.**
Thermal rearrangement of acyl groups in anhydronucleosides. A convenient synthesis of 5'-O-acetylanhydrouridine. K. K. Ogilvie, J. B. Westmore, G. Taylor, D. Lin, D. Iwacha, H. Wayborn, and G. E. Dunn, 2365.
- Webb, J. G. K.**
An aromatic amine-1,3,5-trinitrobenzene σ -complex. E. Buncel and J. G. K. Webb, 129.
- Webster, N. J.**
Determination of $D[(\text{CH}_3)_3\text{Pb}-\text{CH}_3]$ by the toluene carrier method. K. M. Gilroy, S. J. Price, and N. J. Webster, 2639.
- Wehrli, P. A.**
A new synthesis of 6-hydroxydopamine. P. A. Wehrli, F. Pigott, and V. Chu, 3075.
- Weiler, L.**
 ^{13}C -nuclear magnetic resonance spectrum of tropolone. L. Weiler, 1975.
Mass spectra of β -keto esters. L. Weiler, 2707.
- Weiner, P. H.**
Application of factor analysis to gas-liquid chromatography. P. H. Weiner and D. G. Howery, 448.
- Welch, G.**
The dissociation of anilinium ions in aqueous dimethylsulfoxide. K. Yates and G. Welch, 474.
Acidity function behavior in aqueous-organic solvents. I. The H_0 , H_0^+ , and H_A functions in 70% DMSO- H_2O . K. Yates and G. Welch, 1513.
- Wells, E. J.**
Coordination compounds of indium. Part XIX. Ligand exchange studies with indium(III) complexes of trifluoromethyl- β -diketonates. G. T. Tanner, D. G. Tuck, and E. J. Wells, 3950.
- Wells, J. I.**
Novel rearrangement during alkaline hydrolysis of 1,1,1-trichloro-2-alken-4-ones. E. Kiehlmann, B. C. Menon, and J. I. Wells, 2561.
- Werstiuk, E. S.**
Oligoribonucleotide synthesis. IV. Approach to block synthesis. E. S. Werstiuk and T. Neilson, 1283.
- Werstiuk, N. H.**
Addition of ICl to norbornene. The preparation and photochemical isomerization of *syn*-7-iodonorbornene. N. H. Werstiuk, I. Vancas, J. Warkentin, and F. R. S. Clark, 291.
The preparation and acetolyses of 5-deuteriated *exo*-2-norbornyl-*p*-bromobenzenesulfonates. N. H. Werstiuk, R. R. MacDonald, R. W. Ouwehand, W. L. Chan, F. P. Cappelli, J. G. Ballard, R. E. Young, R. E. Massey, G. Timmins, I. Goodwin, A. Walling, and Y. Teruta, 618.
 ^{13}C chemical shifts of highly substituted bicyclo[2.2.1]heptanes. N. H. Werstiuk, R. Taillefer, R. A. Bell, and B. G. Sayer, 2146.
Acid-catalyzed ring opening of halo-nortricyclanes. F. P. Cappelli, G. Timmins, and N. H. Werstiuk, 2163.
Solvolysis of substituted nortricyclanes and norbornenes at 250° . N. H. Werstiuk and T. Kadai, 3350.
- Westaway, K. C.**
Isotope effect studies on elimination reactions. VIII. The mechanism of the 1,3-elimination reaction of 3-phenylpropyl-trimethylammonium iodide with amide ion in liquid ammonia. K. C. Westaway and A. N. Bourns, 2332.
- Westland, A. D.**
Magnetic susceptibilities of ^{23}Tl ions. Part I. A. D. Westland, 1468.
Equilibrium dissociation pressures of NbBr_3 over NbBr_4 . A. D. Westland and D. Lal, 1604.
- Westmore, J. B.**
Synthesis of 8,2'-thioanhydroguanosine. K. K. Ogilvie, L. Slotin, J. B. Westmore, and D. Lin, 1100.
A general synthesis of 8,2'-thioanhydroguanine nucleosides. K. K. Ogilvie, L. Slotin, J. B. Westmore, and D. Lin, 2249.
Thermal rearrangement of acyl groups in anhydronucleosides. A convenient synthesis of 5'-O-acetylanhydrouridine. K. K. Ogilvie, J. B. Westmore, G. Taylor, D. Lin, D. Iwacha, H. Wayborn, and G. E. Dunn, 2365.

- Synthesis of 8,3'-thioanhydroguanosine. K. K. Ogilvie, L. A. Slotin, D. C. K. Lin, and J. B. Westmore, 3276.
- Metal-amino polycarboxylic acid complexes. IV. A polarographic study of lead(II) complexes with diethylenetriamine-pentaacetic acid in aqueous solution. P. Letkeman and J. B. Westmore, 3821.
- Whalley, E.**
The dipole moment derivative of the hydrogen bond in ice. E. Whalley, 310.
- Wharf, I.**
Enthalpies of dissociation of ammonia and amine adducts of some tetraalkylammonium pentafluorosilicates. I. Wharf and M. Onyszczuk, 3450.
- Whelton, B. D.**
Synthesis and stereochemistry of some diastereoisomeric 2-amino-4-*t*-butylcyclohexanols and related compounds. A. F. Casy, E. S. C. Wu, and B. D. Whelton, 3998.
- White, E. H.**
The deamination of the 3 α - and 3 β -amincholestanes and their amide derivatives. F. W. Bachelor and E. H. White, 364.
- Whitehead, M. A.**
Chlorocuprate(II) and chlorocobaltate(II) salts of the aminodiphenylphosphonitrile-amino diphenylphosphonium ion. R. M. C'ipsham and M. A. Whitehead, 75.
Theoretical anisotropic hyperfine tensors in neutral radicals. H. R. Falle and M. A. Whitehead, 139.
Carbon-13 chemical shifts of methylcyclohexanes, cyclohexanols, α - and β -D-glucose and their relation to carbon electron densities from the extended Huckel and Del Re theories. N. Cyr, A. S. Perlman, and M. A. Whitehead, 814.
- Whiting, J.**
A convenient synthesis of 1-(+)-muscarine. J. Whiting, Y.-K. Au-Young, and B. Belleau, 3322.
- Wiebe, H. A.**
The photolysis of tetra(trifluoromethyl)thiophene vapor. H. A. Wiebe, S. Braslavsky, and J. Heicklen, 2721.
- Wiesner, H.**
Infrared band progressions in the CH₂ scissoring region and the ring puckering vibration of trimethylene oxide and some deuterated analogs. H. Wiesner and M. Danyluk, 2761.
Vapor phase Raman transitions in the CH₂ scissoring region and the ring puckering vibration of trimethylene oxide and some deuterated analogs. H. Wiesner, M. Danyluk, W. Kiefer, and H. J. Bernstein, 2771.
- Wiesner, K.**
A synthetic study in the tricyclovetivene series. A. Deljac, W. D. MacKay, C. S. J. Pan, K. J. Wiesner, and K. Wiesner, 726.
The synthesis of delphinine: a stereoselective total synthesis of an optically active advanced relay compound. K. Wiesner, E. W. K. Jay, T. Y. R. Tsai, C. Demerson, L. Jay, T. Kanno, J. Křepinský, A. Vilim, and C. S. Wu, 1925.
Erratum: A synthetic study in the tricyclovetivene series. A. Deljac, W. D. MacKay, C. S. J. Pan, K. J. Wiesner, and K. Wiesner, 3933.
A model compound for anhydroryanodol. B. G. Brownlee, P.-t. Ho, and K. Wiesner, 4013.
- Wiesner, K. J.**
A synthetic study in the tricyclovetivene series. A. Deljac, W. D. MacKay, C. S. J. Pan, K. J. Wiesner, and K. Wiesner, 726.
Erratum: A synthetic study in the tricyclovetivene series. A. Deljac, W. D. MacKay, C. S. J. Pan, K. J. Wiesner, and K. Wiesner, 3933.
- Wigfield, D. C.**
Deuterium isotope effects in the reduction of cyclohexanones. The concepts of steric approach control and product development control. D. C. Wigfield and D. J. Phelps, 388.
- Wightman, R. H.**
A novel phosphate protecting group for oligonucleotide synthesis. R. H. Wightman, S. A. Narang, and K. Itakura, 456.
A simplification in the synthesis of deoxyribonucleotides. S. A. Narang, K. Itakura, and R. H. Wightman, 769.
- Wiles, D. R.**
Nuclear recoil reactions in organomanganese compounds. VI. IMn(CO)₅ and BrMn(CO)₅. I. G. de Jong and D. R. Wiles, 961.
- Wilkinson, A. L.**
An addition reaction of indane with nitric acid in acetic anhydride. A. Fischer, C. C. Greig, A. L. Wilkinson, and D. R. A. Leonard, 2211.
Adduct intermediates in the side-chain nitration of 1,4-dimethylnaphthalene. A. Fischer and A. L. Wilkinson, 3988.
- Williams, D. F.**
Hydrazine derivatives. I. Transcarbamylation reaction. J. A. Lenoir, L. D. Colebrook, and D. F. Williams, 2661.
- Williams, G. J. B.**
The molecular and crystal structure of an oxindole alkaloid (6-hydroxy-2'-(2-methylpropyl)-3,3'-spiro[4.5]undec-2-en-2-ylidene-2-oxindole). M. N. G. James and G. J. B. Williams, 2407.
- Williams, R. E.**
Use of *N*-carboxyanhydrides in the synthesis of dipeptides. The improvement of isolated yields by the facile removal of buffer components. R. J. Gait, J. R. Langlois, and R. E. Williams, 299.
- Williams, R. K.**
The effect of pressure on the rate of acetolysis of a charge-transfer complex. R. K. Williams, J. J. Loveday, and A. K. Colter, 1303.

- Willis, C.**
Isotope effects and hydrogen yields in the radiolysis of H_2O - D_2O mixtures at very high dose rates. A. W. Boyd, C. Willis, and G. C. Lalor, 83.
Primary yields and mechanisms in the radiolysis of N_2O from high intensity electron pulse irradiations of N_2O - O_2 mixtures. C. Willis, A. W. Boyd, and P. E. Bindner, 1557.
A positive-ion reaction mechanism for the radiation induced oxidation of carbon monoxide in the high dose rate radiolysis of CO - O_2 mixtures. C. Willis, A. W. Boyd, and P. E. Bindner, 3508.
- Willis, C. J.**
Studies on fluorinated vinylic and aromatic alcohols and esters. I. S. Chang, J. T. Price, A. J. Tomlinson, and C. J. Willis, 512.
Fully fluorinated alkoxides. Part VI. Derivatives of hydroxyhexafluoroisobutyric acid. J. T. Price, A. J. Tomlinson, and C. J. Willis, 939.
- Wilson, J. R.**
Electrical conduction properties of liquid vanadates. I. Vanadium pentoxide. R. C. Kerby and J. R. Wilson, 2865.
Electrical conduction properties of liquid vanadates. II. The sodium vanadates. R. C. Kerby and J. R. Wilson, 2871.
Electrical conduction properties of liquid vanadates. III. The system V_2O_5 - Na_2O - Fe_2O_3 . R. C. Kerby and J. R. Wilson, 2877.
- Wilson, R.**
Examination of two theories for absorption of microwave and far infrared radiation by polar liquids. M. Benson, G. D. Martin, S. Walker, J. Warren, and R. Wilson, 2610.
- Wilson, W. L.**
Selectivity in NBS bromination. I. The reaction of methyl enol ethers of cyclohexane-1,3-diones. A reexamination. D. V. C. Awang, A. Vincent, W. L. Wilson, and H. W. Avdovich, 104.
- Winter, J. G.**
Studies in solvolysis. Part IV. Substituent and solvent isotope effects in the solvolysis of a series of benzyl trifluoroacetates. J. G. Winter and J. M. W. Scott, 1886.
Studies in solvolysis. Part V. Further investigations concerning the solvolysis of primary, secondary, and tertiary tribluoroacetates. D. J. Barnes, M. Cole, S. Lobo, J. G. Winter, and J. M. W. Scott, 2175.
- Wolfe, S.**
Sulfur-free penicillin derivatives. I. Functionalization at C5. S. Wolfe, W. S. Lee, G. Kannengiesser, and J.-B. Ducep, 2894.
Sulfur-free penicillin derivatives. II. Functionalization of the methyl groups. S. Wolfe, W. S. Lee, J.-B. Ducep, and G. Kannengiesser, 2898.
Sulfur-free penicillin derivatives. III. Regeneration of fused β -lactams via intramolecular displacement. S. Wolfe, J.-B. Ducep, G. Kannengiesser, and W. S. Lee, 2902.
- Wolkoff, A. W.**
The formation of alkenes by the thermal elimination reaction of *N*-methyl-4-alkoxypyridinium iodides. I. Scope of the reaction. G. H. Schmid and A. W. Wolkoff, 1181.
The formation of alkenes by the thermal elimination reaction of *N*-methyl-4-alkoxypyridinium iodides. II. An investigation of the mechanism. G. H. Schmid and A. W. Wolkoff, 1188.
Reaction of *N*-methyl-4-(2'-octoxy)pyridinium iodide with silver oxide. Evidence for a mechanism involving a pseudobase intermediate. G. H. Schmid and A. W. Wolkoff, 2511.
- Wollner, G. P.**
Radiation-induced oxidation of 2-propanol by nitrous oxide in alkaline aqueous solution. C. E. Burchill and G. P. Wollner, 1751.
- Wolodarsky, W. H.**
Electron spin resonance of γ -irradiated acetylacetone in adamantane matrix. W. H. Wolodarsky and J. K. S. Wan, 1096.
- Wong, C. M.**
Synthesis of *cis*-jasmone and dihydrojasmone. H. C. Ho, T.-L. Ho, and C. M. Wong, 2718.
Dethioacetalization with thallium(III) trifluoroacetate. T.-L. Ho and C. M. Wong, 3740.
- Wong, J. Y.**
The use of polymer supports in organic synthesis. The synthesis of monotrityl ethers of symmetrical diols. C. C. Leznoff and J. Y. Wong, 2892.
- Wong, S. K.**
Electron spin resonance study of the self-disproportionation of some semiquinone radicals in solution. S. K. Wong, W. Sytnyk, and J. K. S. Wan, 3052.
- Wong, W. H.**
Energy distributions of reaction product by statistical phase space theory. W. H. Wong, 633.
Remarks on the concept of minimum state density in the activated complex theory. W. H. Wong, 3386.
- Wood, G.**
Conformational studies of substituted trimethylene sulfites by proton magnetic resonance. G. Wood, G. W. Buchanan, and M. H. Miskow, 521.
- Woodhams, F. W. D.**
Pyrochlores. VII. The oxides of antimony: an X-ray and Mössbauer study. D. J. Stewart, O. Knop, C. Ayasse, and F. W. D. Woodhams, 690.

- Worman, J. J.**
A new photochemical reaction of unconjugated thioketones. J. J. Worman, M. Shen, and P. C. Nichols, 3923.
- Worsfold, D. J.**
Hindered rotation in styryl anions. S. Brownstein and D. J. Worsfold, 1246.
- Wright, J. L. C.**
Mass spectra of some tropolones and tropolone methyl ethers. J. L. C. Wright, W. D. Jamieson, S. Safe, and L. C. Vining, 821.
- Wróbel, J. T.**
The structure of nupharolutine, an alkaloid of *Nuphar luteum*. J. T. Wróbel, A. Iwanow, C. Braekman-Danheux, T. I. Martin, and D. B. MacLean, 1831.
Neothiobinupharidine sulfoxide, a new alkaloid of *Nuphar luteum*. J. T. Wróbel, A. Iwanow, J. Szychowski, J. Poplawski, C. K. Yu, T. I. Martin, and D. B. MacLean, 1968.
- Wu, C. S.**
The synthesis of delphinine: a stereoselective total synthesis of an optically active advanced relay compound. K. Wiesner, E. W. K. Jay, T. Y. R. Tsai, C. Demerson, L. Jay, T. Kanno, J. Křepinský, A. Vilim, and C. S. Wu, 1925.
- Wu, E. C.**
Photolysis of 2,5- and 2,4-dimethylpyrrole vapors at room temperature. E. C. Wu and J. Hecklen, 1678.
- Wu, E. S. C.**
Synthesis and stereochemistry of some diastereoisomeric 2-amino-4-*t*-butylcyclohexanols and related compounds. A. F. Casy, E. S. C. Wu, and B. D. Whelton, 3998.
- Yaffe, L.**
Analysis of ^{134}Cs isomer ratios in the fission of ^{237}Np with protons in the energy range 20–85 MeV. C. L. Rao and L. Yaffe, 1877.
- Yang, M. T.**
4,6-*O*-(1-Carboxyethylidene)-D-mannose as a structural unit in capsular polysaccharide of *Klebsiella* K-type 5. G. G. S. Dutton and M. T. Yang, 2382.
- Yared, W. F.**
Determination of the heat of formation of hexafluorobenzene. M. Krech, S. J. W. Price, and W. F. Yared, 2935.
- Yarwood, A. J.**
Fluorescence and phosphorescence of 2,3-pentanedione. A. W. Jackson and A. J. Yarwood, 1331.
Emission and deactivation of the excited states of 2,3-pentanedione. A. W. Jackson and A. J. Yarwood, 1338.
Quenching of fluorescence of chloropentfluoroacetone by saturated hydrocarbons. A. J. Yarwood, 1429.
- Yates, K.**
The dissociation of anilinium ions in aqueous dimethylsulfoxide. K. Yates and G. Welch, 474.
A critical test of the Hammett acidity function. K. Yates and S. A. Shapiro, 581.
Kinetic evidence for predominant oxygen protonation of amides. C. R. Smith and K. Yates, 771.
Acidity function behavior in aqueous-organic solvents. I. The H_0 , H_0^+ , and H_A functions in 70% DMSO–H₂O. K. Yates and G. Welch, 1513.
- Yates, P.**
cis-5-Cyclooctene-1,2-dione and its ethylene ketals. P. Yates, E. G. Lewars, and P. H. McCabe, 1548.
- Yeats, P. A.**
Gallium(III)-trisfluorosulfate. A. Storr, P. A. Yeats, and F. Aubke, 452.
The synthesis and structural studies of some dialkyltin(IV)-salts of strong monobasic acids. T. H. Tan, J. R. Dalziel, P. A. Yeats, J. R. Sams, R. C. Thompson, and F. Aubke, 1843.
- Yeats, R. B.**
The oxygenation of 2-oxazolin-5-ones: a new synthesis of imides. R. Bisson, R. B. Yeats, and E. W. Warnhoff, 2851.
- Yeddanapalli, L. M.**
Vapor phase catalytic transformations of terpene hydrocarbons in the C₁₀H₁₆ series. I. Isomerization of α -pinene over alumina. A. Stanislaus and L. M. Yeddanapalli, 61.
Vapor phase catalytic transformations of terpene hydrocarbons in the C₁₀H₁₆ series. II. Aromatization of α -pinene over chromia-alumina. A. Stanislaus and L. M. Yeddanapalli, 113.
- Yerhoff, F. W.**
3-Ketoglutarates: compounds with Mn(II), Co(II), Ni(II), Cu(II), Zn(II), Mg, and Na. F. W. Yerhoff and D. W. Larson, 826.
- Yip, C. K.**
Photolysis of di-*tert*-butyl peroxide at high pressure. C. K. Yip and H. O. Pritchard, 1531.
- Yip, R. W.**
The triplet state of ketones in solution: quenching of triplet acetone by amines. R. W. Yip, R. O. Loutfy, Y. L. Chow, and L. K. Magdzinski, 3426.
- Young, L.**
Theory of ionic conduction in solids. L. Young, 574.

Young, R. E.

The preparation and acetolyses of 5-deuteriated *exo*-2-norbornyl-*p*-bromobenzenesulfonates. N. H. Werstiuk, R. R. MacDonald, R. W. Ouwehand, W. L. Chan, F. P. Cappelli, J. G. Ballard, R. E. Young, R. E. Massey, G. Timmins, I. Goodwin, A. Walling, and Y. Teruta, 618.

Young, R. H.

Substituent effects in dye-sensitized photooxidation reactions of furans. R. H. Young, R. L. Martin, N. Chinh, C. Mallon, and R. H. Kayser, 932.

Yu, C. K.

Neothiobinupharidine sulfoxide, a new alkaloid of *Nuphar luteum*. J. T. Wróbel, A. Iwanow, J. Szychowski, J. Poplawski, C. K. Yu, T. I. Martin, and D. B. MacLean, 1968.

Zador, M.

La photo-oxydation du Hg(I) par le Ce(IV) en solution aqueuse d'acide perchlorique. A. Nuyt et M. Zador, 2413.

Etude cinétique des systèmes Cu(II)adénosine et Cu(II)D-ribose. G. Boivin et M. Zador, 3117.

Zamecnik, J.

Total synthesis of (\pm)-ishwarane, a tetracyclic sesquiterpenoid. R. B. Kelly, J. Zamecnik, and B. A. Beckett, 3455.

Zanlungo, A.

Photoamidation of 3,4,6-tri-*O*-acetyl-1,2-dideoxy-D-*arabino*-hex-1-enopyranose. A. Rosenthal and A. Zanlungo, 1192.

Zbozny, M.

High resolution nuclear magnetic resonance investigation of the structure of the adducts formed by the interaction of benzyldenemalononitriles with trialkylphosphines. C. A. Fyfe and M. Zbozny, 1713.

Zea Ponce, I. Y.

Rearrangement studies with ^{14}C . XXXVII. The treatment of 1- ^{14}C -1-chlorobutane with aluminum chloride. C. C. Lee and I. Y. Zea Ponce, 3179.

Zelonka, R. A.

Five-coordinate tertiary phosphine and arsine adducts of copper(hexafluoroacetylacetonate)₂. R. A. Zelonka and M. C. Baird, 1269.

Benzene complexes of ruthenium(II). R. A. Zelonka and M. C. Baird, 3063.



